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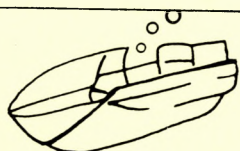
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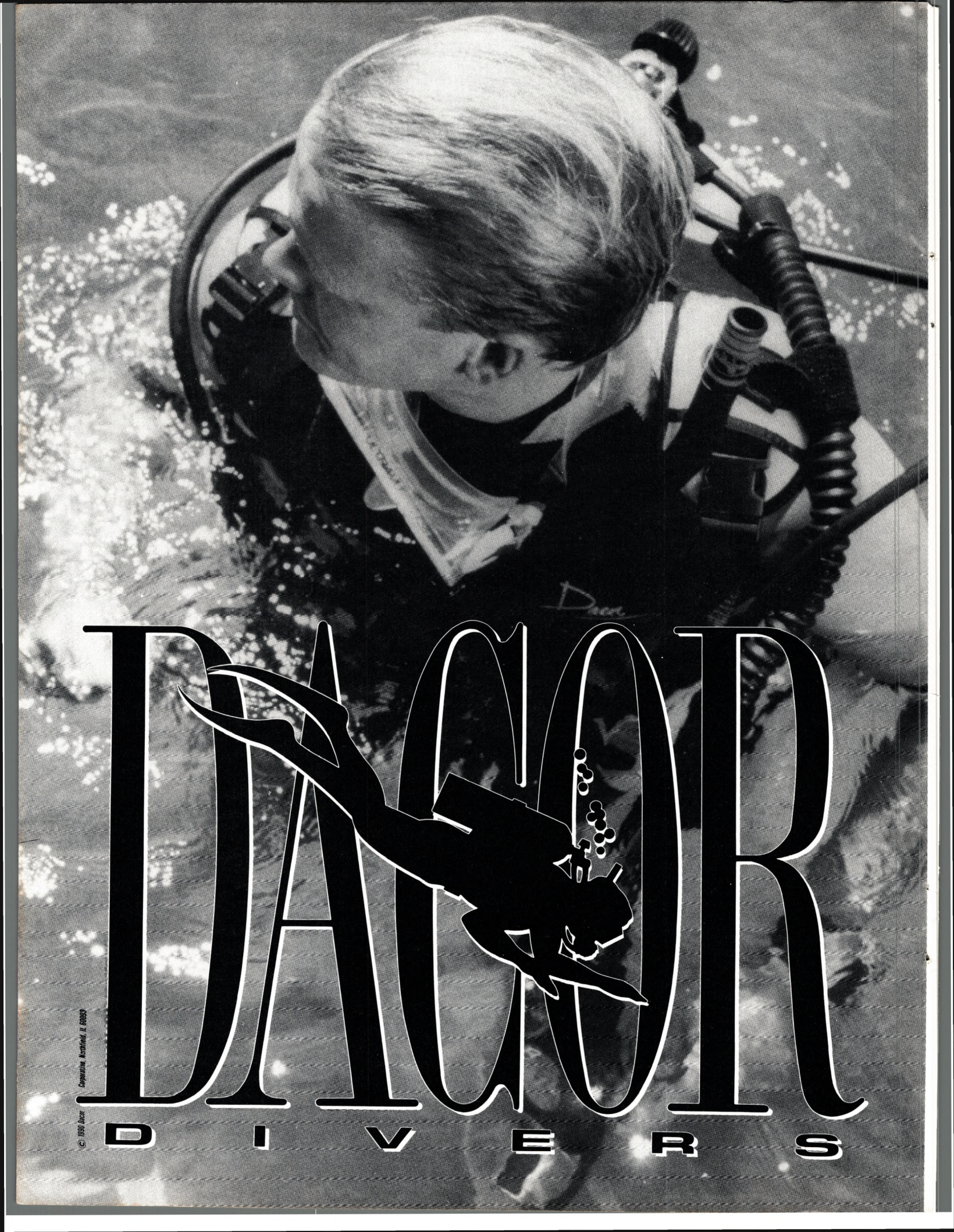
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Cindy Campbell glides through the clear waters of the South Pacific. Photo by Tom Campbell.

TUSA

NEW LIBERATOR XTEN

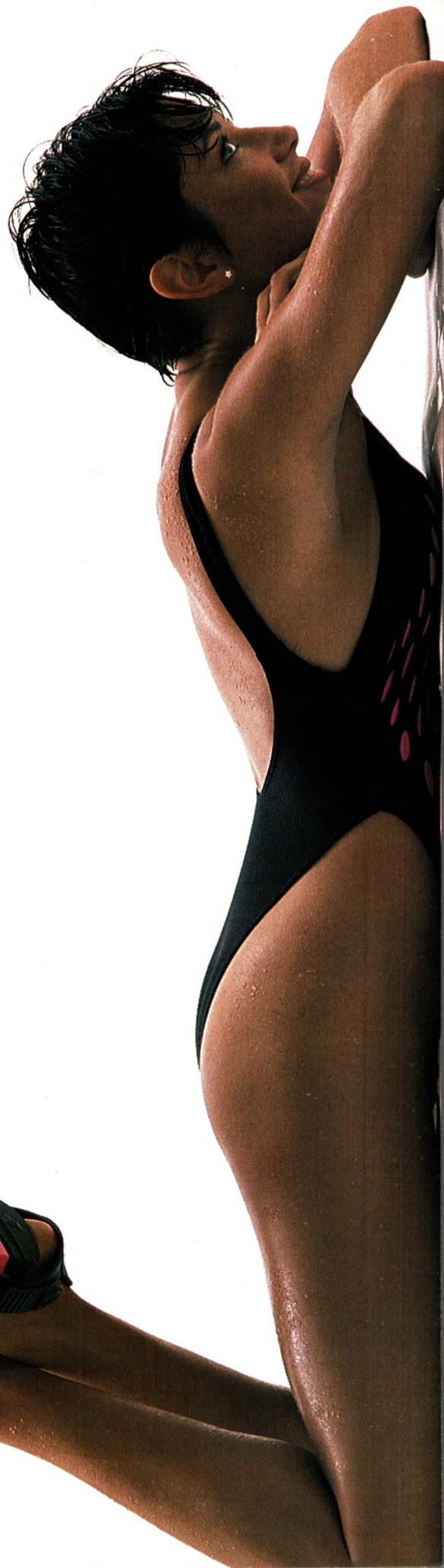
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EDITORIAL

When it Finally Happens to You

On page 19 of this issue columnist Rick Baker discusses oil spills. He refers to the *Exxon Valdez* disaster, and asks us to consider how we might feel if such a thing were to happen in our own backyard.

Well, it just happened in mine. A British Petroleum-leased oil tanker somehow managed to punch a hole in its own hull while unloading crude oil at a pipe station just off the coast of my town, Huntington Beach. Out gushed a half-million gallons of oil, creating a slick two miles wide and 10 miles long that closed the coastline to fishing, surfing and diving.

From my balcony I could see the ship listing offshore, and with a pair of binoculars I could just make out the keystone cop antics of the cleanup boats as they scurried around the stricken tanker like yapping dogs trying to stampede a stupid cow that had somehow managed to get itself stuck in a mud hole.

At first I couldn't believe that yet another oil spill had occurred in this nation's coastal waters. Last year two of them gummed up East Coast beaches and, of course, there was the *Exxon Valdez* incident in Prince William Sound. The year before that it happened three times off Washington's coast. And now it happened in Southern California.

But perhaps I shouldn't be surprised. I think it's pretty clear by now that there are many people involved in the oil business who, in spite of the assurances of their public relations departments, simply don't give a damn about the damage they cause to the environment, just as long as their balance sheets stay as black as the oil they keep spilling along our coastlines.

And I guess it really shouldn't be a surprise to anyone that oil companies feel this way. After all, why should they make any effort to improve their ecological records? It's just an added expense, and based on results, what difference does it make anyway? I mean, the day after Exxon's Alaska mega-disaster the company had the arrogance to raise its prices at the pumps, then up and left the cleanup job unfinished. But in spite of such spit-in-your-face behavior, Exxon gas stations don't appear to be hurting for business.

Which in a sad way I can sort of understand. Sometimes it's easy to feel like it's out of our control, that regardless of what we do, the problems are just too big for us as individuals to make a difference. Sometimes it makes me want to crouch in a corner and pull my sweater up over my head. But of course that's no answer, if for no other reason than that's what these ecological terrorists in their three-piece suits want me to do.

At the recent Diving Equipment Manufacturers Association trade show in Orlando, Florida, I had the opportunity to hear Jean Michel Cousteau talk about taking action in support of the environment. He pointed out that accomplishing the impossible is not so uncommon when individuals decide to act.

Cousteau illustrated his point by referring to the Berlin Wall. Only a year ago nobody would have believed that the Berlin Wall would actually crumble, both symbolically and literally, but it did. What's more, the people of eastern Europe suddenly decided that they had had enough of Communist domination, and just like that it was over.

Well then, it stands to reason that the impossible can occur on the environmental front too. Oil spills can be stopped, gill nets can be retrieved, dolphins can be spared from the nets of the tuna fleets. When will this happen? When we as individuals decide that we've had enough, and we take action.

To paraphrase Cousteau, you don't have to quit your job and move into the mountains and eat tree bark to be an effective environmentalist. You have only to figure out what you want to do to help your world, and then simply do it. Action is action; no effort is too small. Disappointment and despair come only from doing nothing.

As Cousteau says, take a look at the issues. Find something that you feel strongly about, that you would enjoy participating in. Then take some action.

Refuse to buy tuna in markets or restaurants. Sign a petition to get the gill net initiative on California's November ballot. Buy a T-shirt from one of the environmental groups who will put your contribution to good use. Plant a tree. Drop just one postcard to your Congressman expressing your views on the environment. Send \$20 in to support Greenpeace's *Rainbow Warrior* or the Cousteau Society's *Calypso*. Or boycott one of these oil companies that's doing the world dirty and rubbing our noses in it.

If everyone, divers and nondivers alike, found just one issue that they could get behind, and then they took some sort of tangible action on it, can you just imagine what we might be able to accomplish? With drooping sales and pressure from Congress, the tuna industry might see that it's in its best interest to stop killing dolphins, or maybe companies like Exxon, feeling the pinch of a major boycott, might finally decide to take environmental issues seriously. Impossible you say? That's what they said a year ago about the Berlin Wall.

We are all individuals, and as individuals we can make a difference. All we have to do is determine what it is that we want to accomplish, and then go out and take action toward that goal.

I'm going to do something. I think I'll go find one of those stinger missiles that we won't be needing to use against the USSR anymore, and point it instead at the company responsible for despoiling the shoreline of Huntington Beach. Or, I'll buy another *Save Our Shores* T-shirt. But either way, the action I take is going to make a difference.

John Brumm
Editor

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PACIFIC DIVER accepts unsolicited materials, both written and photographic. All submissions and queries should be accompanied by a stamped, self-addressed envelope to ensure their return. Mail all editorial correspondence and slides to Editor, PACIFIC DIVER Magazine, P.O. Box 6218, Huntington Beach, CA 92615.

Advertising Offices:
3197-E Airport Loop Dr., Costa Mesa, CA 92626; (714) 546-4370; FAX (714) 662-3486.

PACIFIC DIVER Magazine is published by Western Outdoors Publications. Other affiliated publications are *Western Outdoor News*® and *WESTERN OUTDOORS*® magazine.

Subscriber service, change of address, P.O. Box 2027, Newport Beach, CA 92659-1027, telephone (714) 361-9765.

PACIFIC DIVER is published bi-monthly by Western Outdoors Publications, 3197-E Airport Loop Drive, Costa Mesa, CA 92626. Application to mail at second class postage rates is pending at Costa Mesa, CA and additional mailing offices.

POSTMASTER: Send address changes to PACIFIC DIVER, 3197-E Airport Loop Drive, Costa Mesa, CA 92626.

SUBSCRIPTION RATES: Single copy \$2.00 published bi-monthly, 6 issues (one year) \$11.95. Subscription outside of U.S. add \$8.00 postage. Paid orders in U.S. funds only. Third class postage paid at Fullerton, CA and additional offices.

LETTERS

"Focus On:" Sheds Light on Green Sea Turtles

Hearty congratulations are in order for publishing the "Focus On:" article on green sea turtles in the September/October '89 issue. Divers here in Hawaii often have the opportunity to see these graceful, gentle ocean creatures. However, often they are not aware that green turtles are fully protected under the U.S. Endangered Species Act. This includes protection from "harassment," such as approaching the animals so close they swim wildly away in fright, or grabbing onto their shells. Your article did a superb job of educating readers about the need for protecting these animals, while at the same time offering interesting facts about the animal.

This was indeed a refreshing breath of "compressed air" for us divers who all too often receive inadequate or no information about the protected status of sea turtles when reading your competitor's magazine (*Skin Diver!*).

George Balazs
Honolulu, HI

California Diver Takes Action Against Gill Nets

All California divers must get involved to get our deadbeat assemblymen moving on the gill net issue. I wrote a letter to both Assemblyman Trice Harvey of the 33rd district and Phil Wyman of the 34th district. Following is a letter I received from Harvey. I have yet to hear from Wyman, but I don't intend to stop with just a letter. Maybe I'll pay him a personal visit and bring him some dead fish. Think that will open his eyes?

Dennis Dilley
Bakersfield, CA

Dear Mr. Dilley:

Thank you very much for your letter supporting Assembly Bill 1 (Allen, Bates, Bradley and Ferguson). I appreciate hearing your views...

I find it horrifying that such atrocities are occurring to our ocean life as a result of gill nets and I assure you that I supported this measure when it came before me for a vote. The pictures that you enclosed with your letter were very sobering. I have been keeping aware of similar situations that are happening around the world as well as here in California and this is clearly a problem that needs to be rectified.

As you may know, this legislation has been brought up before in the 1988 legislative session and was under the title of Assembly Bill 2954. This was the only opportunity that I had to vote for it. Unfortunately, however, the measure failed due to strong opposition, mostly from the commercial fishing industry. AB 1 is basically the same bill reintroduced and is expected to face the same opposition...

Assemblyman Trice Harvey
33rd District, Sacramento, CA

Washington Game Law Listings a Bunch of "Ah-Baloney"

I think your person responsible for doing the game laws for Washington in the November/December '89 issue's "In Season" has nitrogen narcosis! At least we won't have to worry about out-of-state divers taking all of our game. It will take them some time to find a "kamchatka" abalone that is eight inches across. But on the other hand, they won't have that much time to search after the jail time they will serve for taking too many lingcod.

There are two sets of fish and game laws for the state of Washington, one for regular fishing and one for skin/scuba divers. Both are included in the game laws booklet, but they have to be fully read to see how they fit together in Washington's general game-taking scheme.

I realize that you probably have a space concern, and you've tried to summarize as best as possible, but what was printed in the November/December issue was not accurate, even in the shortened version. Good luck in finding an eight-inch abalone. I'll definitely let you know if I find one!

Finally, I ardently implore divers not to take wolf eels in Washington waters. Many have been tamed by divers for enjoyment. There are lots of other fish and things to eat. I would also urge that divers only take what they intend to eat, even if it is below the limit. Let's all help to conserve this wonderful natural resource!

Kay Hanvey
Chipmunk Enterprises
Olympia, WA

We stand corrected, and have revised Washington's game laws in our "In Season" section. Thanks for bringing this to our attention. — Ed.

Letters to the editor should be addressed to: PACIFIC DIVER Magazine, P.O. Box 6218, Huntington Beach, CA 92615. Letters may be edited for clarity and space.

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DIVERS UPDATE

Abalone Poachers Get Busted on the North Coast

Two commercial urchin divers thought they were pretty slick until Fish & Game officers nabbed them with 600 red abalone near Fish Mill Cove on the North Coast. Abs are currently selling for \$22 to \$26 apiece.

Tipped off by a concerned citizen, Fish & Game officers watched the divers for two days before finally catching them in the act. As Fish & Game officers descended, the culprits, standing knee deep in their enormous abalone catch, claimed they were just out diving for urchins.

Because of the number of abalone taken, Fish & Game is consulting marine biologists to assess the ecological damage. Abalone require seven to eight years to reach legal size, so replacing 600 animals will require at least that much time to rejuvenate the Fish Mill Cove bed.

If convicted, the two divers face possible one-year jail terms and big fines. All we have to say is, *Sock it to 'em, judge.*

Tuna Industry Gets Trampled in Warning Label Bill Hearings

Thanks to the strong support shown by concerned citizens from all over the country, the Dolphin Protection Consumer Information Act of 1989, introduced by Rep. Barbara Boxer, survived a massive tuna industry onslaught during the first hearings late last year.

In spite of the tremendous pressure applied by the tuna lobby to defeat the bill, support for the bill has actually grown. There are now over 120 cosponsors in the House and a companion bill is about to be introduced in the Senate.

If adopted, the bill will require that a label be placed on cans of tuna that were caught using fishing methods that kill dolphins. Proponents of the bill feel this will be a major breakthrough in the fight to stop the dolphin slaughter off our coast, because it will enable millions of Americans to learn about what some tuna fishermen are doing out there on the ocean where nobody can see them, and decide for themselves if they want to support tuna brands such as Bumblebee, Starkist, Chicken of the Sea and others that are responsible for killing over 150,000 dolphins each year.

It was for that very reason that the billion-dollar tuna industry mustered its army of lobbyists and PAC operatives and waged a last-minute campaign to kill the warning label bill at the hearings. Fortunately for everybody in the U.S., all

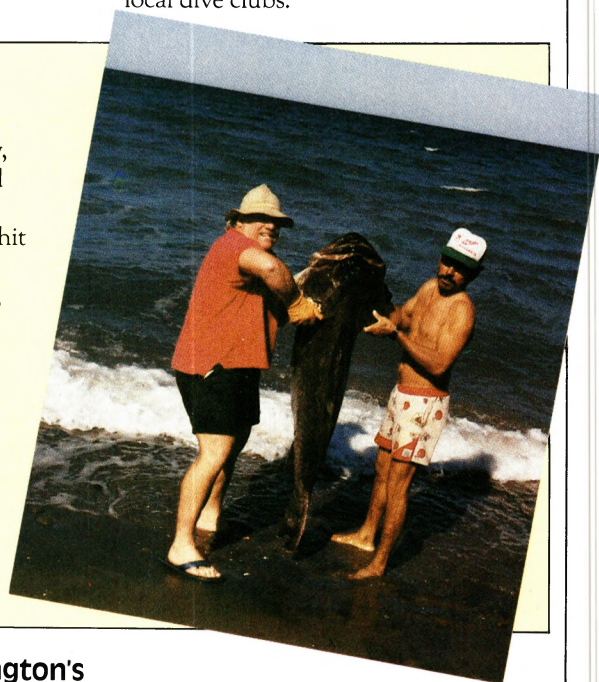
industry efforts to stonewall, delay or dilute the bill were overwhelmingly defeated.

Here's something else to chew on: During the hearings, an economic expert testified that it would cost the tuna industry *one cent* a can to pay for compliance and monitoring programs to ensure accurate and reliable labeling. The tuna industry responded by claiming that being forced to pay a penny a can for this labeling would be an unreasonable economic burden for the sake of a few dolphins. Once again, the guys and guyettes of the tuna industry have demonstrated what lengths they will go to, and what idiotic statements they will make, to squeeze literally every penny of profit out of their operations at the expense of our marine mammal populations.

A foul smell is rising from the waterfront canneries of our nation's tuna companies, but we don't think it's coming from the fish.

Are You Serious?

Last November, Dale Konrad (left), of Fountain Valley, California, was prowling around the beaches of Loreto, Baja California, when he decided to hit the water for some skin diving. A few minutes later he surfaced, dragging this 112-pound grouper behind him. Konrad's guide (right) is reportedly still shaking his head in wonder.



Activities Focus on Washington's Coast and Environment

Awareness and concern over the environment and water quality of Washington's 2,421 miles of coastline triggered three recent activities to increase public awareness and initiate public action.

The Washington Department of Ecology hosted a one-day conference to address the implications of sea level rise on the Northwest's coastal and estuarine wetlands. Globally, the sea level has been rising about one-half foot per century. In some parts of Puget Sound, where the land is actually sinking, the sea level is rising

about one foot per century. Now, with anticipated increases in global warming, scientists expect the sea level rise to increase noticeably in the next 30 to 40 years. Any dramatic rise in sea level could profoundly affect Washington's future.

The one-day conference held February 7 covered national and local research on sea level rise. For more information contact the Department of Ecology, Shorelands and Coastal Zone Management Program, MS PV-112, Olympia, WA 98504-8711.

Nineteen eighty-nine also saw the initiation of the first annual Coastal Weeks celebration. The celebration was aimed at increasing public awareness of the importance of protecting and improving our Washington marine areas. Activities included special exhibits from the Seattle Aquarium, a coastal literary forum, and public cleanup of Puget Sound beaches — both above and below the waterline — by concerned citizens and scuba divers from local dive clubs.

More than 10 tons of debris was removed from Puget Sound waters. Dive clubs and other concerned groups are encouraged to contact the Puget Sound Water Quality Authority at (800) 54-SOUND to participate in next spring's Coastal Weeks activities.

"Environment 2010" is a newly released "State of the Environment" report. It is a visionary, long-range planning effort instituted by the Washington governor in 1988 to create an action plan based on an analysis of the current and projected status of our environment, including the marine

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waters of Washington and the 23 major identifiable threats to their future. A copy of the report can be obtained by contacting the state's ecology public information office at (206) 459-6145.

Need a Dive Buddy? Call DBN

The Dive Buddy Network has been created to bring together dive buddies with similar interests. For a yearly fee of \$20, members get six buddy referrals a year as well as information on local boat dives and special events. The service will even help members sell used equipment by put-

DIVERS UPDATE

ting sellers in touch with interested member buyers.

For more information, contact the Dive Buddy Network, P.O. Box 828, North Highlands, CA 95660; (916) 344-8383.

PADI Instructor Crossovers are now Available Thru Course Directors

As of February 1, 1990, dive instructors of other agencies can become PADI open water instructors by attending an Instructor Orientation Course (IOC) conducted

by a local PADI course director, and an Instructor Examination (IE) conducted by PADI headquarters. IOCs, which are open to instructors certified in teaching status by other agencies for more than six months, can be conducted at PADI 5-Star Instructor Development Centers in the U.S. and internationally, making crossing over to PADI more convenient than ever.

For more information, contact your local PADI 5 Star Instructor Development Center, or write PADI, 1251 E. Dyer Rd., #100, Santa Ana, CA 92705-5605. You can also call (714) 540-7234 for a list of PADI 5 Star IDCs.

Continued

Guest Editorial

Legislature Again Fails to Protect Our Coastal Waters. Now It's Our Turn.

By Assemblywoman Doris Allen

Once again, the California legislature has sounded the death knell for a gill net ban along the Southern California coast. Now it's time to let the people decide.

Since 1984, I've been working in the legislature to ban gill nets. But at every turn, my efforts have been thwarted by the state's powerful commercial fishing industry. Last month was no different when the Assembly Water, Parks and Wildlife Committee killed my most recent legislation to ban gill nets (AB 1), once again siding with commercial fishermen against the public.

While the commercial fishing industry may be willing to compromise the future of our oceans and deplete the very resources it needs to survive, the voting public is becoming increasingly determined to protect our seas for future generations. Given a chance, they will vote to ban gill nets. Now it's up to us to give them that chance.

Not only do gill nets catch and kill fish indiscriminately, they also slaughter thousands of endangered marine animals each year, including gray whales, dolphins, seals and sea otters. Nearly invisible underwater, gill nets can stretch for miles, killing virtually every animal that becomes entangled, regardless of its commercial value. Only about 25 percent of the animals caught in gill nets are marketable. The rest are simply thrown back into the sea, mutilated or dead.

Gill nets are already banned along the western United States and Canada, from Santa Barbara to Alaska. Major gill net bans were enacted in the 1980s along the Northern and Central California coast,

making Southern California the last remaining area of the western United States where gill nets are still permitted. Even the United Nations has called for an international ban on these destructive nets beginning in 1992.

Since the legislature refuses to act on this issue, I have launched an initiative for the November 1990 statewide ballot. Called the *Marine Resources Protection Act of 1990*, the initiative would ban gill nets along the California coast and establish four new ocean water ecological reserves for marine research.

To reduce the economic impact banning gill nets would have on the 300 gill net license holders in the state, the initiative provides the funds needed to help gill net fishermen switch to less destructive gear. As a result, the initiative would not eliminate jobs or cause economic hardship. It would, however, stop the killing.

If we can gather the signatures needed to qualify this initiative for the ballot, it will pass overwhelmingly. Unlike some of my legislative colleagues, voters understand the need to protect our environment and natural resources.

Although public opinion is on our side, time is not. We need to collect 900,000 signatures by April 6, 1990 — a tremendous undertaking, but we can do it if we work together. We also need to raise \$250,000 for paid signature gathering to supplement our volunteer efforts. Without both, we won't qualify in time.

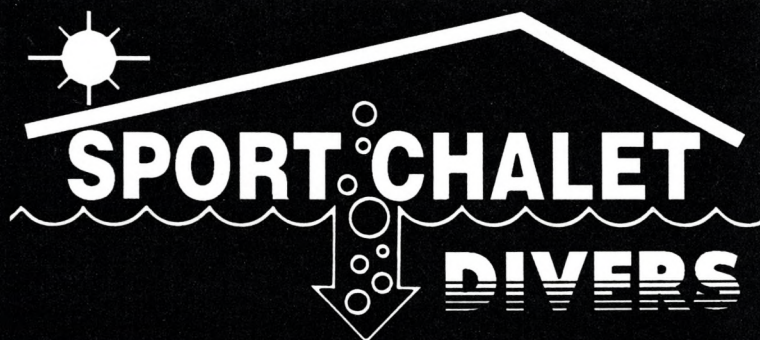
You can help put the *Marine Resources Protection Act* on the ballot by circulating petitions and, if possible, by making a small contribution to the campaign.



Petitions can be obtained by calling the Committee to Ban Gill Nets at (714) 828-9269. Likewise, contributions can be made payable and sent to: The Committee to Ban Gill Nets, P.O. Box 2323, Cypress, CA 90630.

If we work together, we can put an end to gill nets and stop their deadly presence off the California coast. Otherwise, it will be business as usual for the commercial fishing fleet.

Editor's Note: PACIFIC DIVER will have petition sheets available to sign at its booth at the Seaviews diving show at Oakland's Hyatt Convention Center, March 24 and 25. Come on by and add your signature to the list. We've given our politicians ample opportunity to solve this problem. Now it's time to band together and take care of it ourselves.



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DIVERS UPDATE

Manufacturers Donate Prizes to Encourage DAN Memberships

Join DAN (Divers Alert Network) or renew your membership and become eligible to win free diving equipment. Through the cooperative effort between DAN and diving equipment manufacturers and businesses, a bimonthly drawing for scuba equipment will be held among all new and renewing DAN members. Anyone submitting an application for DAN membership or membership renewal will be automatically eligible for the equipment drawings.

All lucky winners will receive a selected prize with a retail value of \$100 or more by

a supportive diving business.

This membership promotion for DAN is a combined "thank you" from DAN and the dive industry to all those who support safe diving through their memberships in DAN. Anyone interested in joining or renewing an existing membership may do so by calling DAN's toll free membership line at (800) 446-2671.

Oregon Plans to Establish a Series of Marine Parks

Due to the increasing number of sport divers in Oregon, and recognizing the economic tourism benefits of sport diving,

the Oregon State Department of Parks, in conjunction with sport diving enthusiasts, is seeking to establish a series of underwater marine parks along the Oregon coast.

Public officials are beginning to view sport diving as an excellent method for attracting tourism. Popular but difficult diving sites such as Nellies Cove and Tichenor Cove near Port Orford attract hundreds of divers annually and could benefit by the development of park facilities, which would increase both diving safety and local economic growth. Public officials cognizant of the importance of commercial fishing and sport-

Point of View

By Tim Kelly

California Councils of Divers Represent Your Interests. So Get Involved!

California has one of the largest populations in the U.S., attributable partly to the varied recreational opportunities available here. The Pacific Ocean is one of these cherished resources; however, we are loving it to death by asking it to serve recreational, fishing and energy interests with little regard for the interrelation of these demands.

As the current condition of our coastal waters will attest, we can't depend on California's ineffective regulatory agencies to responsibly manage these resources. Consequently, it becomes the responsibility of private organizations to represent the needs and concerns of California's diving community. And on the forefront of this fight are the diving councils of California, and the Underwater Society of America.

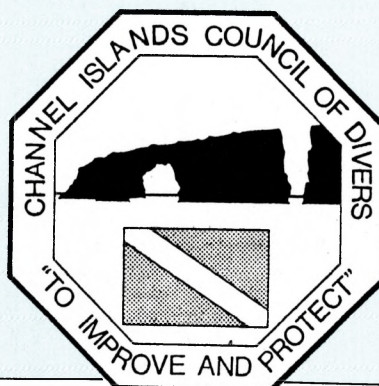
The California Council of Divers was formed in 1946 to represent divers in legislative matters of conservation, education and resource management. In 1959, California's organization banded together with other councils and clubs from across the U.S. and formed the Underwater Society of America (USA), a spearhead organization that would represent the diving community on a national level. Since then, the Society has evolved into a large organization with the support of 30 member councils nationwide.

What all this means to the average sport diver is that there is a well-organized framework in place that supports the individual diver, so the individual diver should, in turn, support the organization. There are many educational and competitive programs available to council

members, from safety programs to marine biology courses to sports (underwater hockey, underwater rugby).

Of course, the councils still maintain a watchdog position on issues of resource management, water quality and diving related legislation. For example, the San Diego Council of Divers is heavily involved in that city's plans to improve its sewage treatment system, because of the corresponding water quality benefits to the Point Loma kelp beds, a favorite local dive spot.

Santa Barbara and Ventura counties' rapid population growth has had a corresponding impact on coastal resources. As a result, the Channel Islands Council of Divers was formed to deal more directly with local issues. Items of immediate concern include supporting Assembly Bill 1, the Anti-Gill Net bill and initiative, and regaining diver access to the recently closed La Jennelle site at Port Hueneme. The council also hopes to offer education and safety programs in the near future.



The California Council of Divers is made up of councils representing the Sacramento Valley, San Diego, Central California, Greater Los Angeles and the Channel Islands area. I urge all California divers to seek out and join their local clubs and councils. Membership costs less than \$20 per year, and automatically entitles you to membership in the Underwater Society of America with its attendant benefits (including accident insurance).

Like all organizations, the councils need financial support and behind the scenes support from their membership. However, meeting attendance is not mandatory.

So I urge everyone to "try us on for size." I think you will like what you see.

Contact List

Greater Los Angeles Council of Divers
c/o Tom Quick, 18333 Hatteras St., #8 Tazana, CA; (818) 705-0176.

San Diego Council of Divers
c/o Joanna Jones, Box 9259, San Diego, CA 92109; (619) 578-4467.

Sacramento Valley Council of Divers
(Valley Council of Diving Clubs) c/o Jim Pache, 3888 San Key Rd. Pleasant Grove, CA 95668.

Central California Council of Divers
c/o Mike Gower, P.O. Box 779, Daly City, CA 94017; (408) 286-8840.

Channel Islands Council of Divers
Box 7271, Ventura, CA 93008; (805) 647-5141 (Ventura), (805) 685-2928 (Santa Barbara).

Underwater Society of America
P.O. Box 628, Daly City, CA 94017.

DIVERS UPDATE

fishing, though supportive of the marine parks, have stressed that any prospective marine parks not restrict commercial fishing, navigation or boat mooring. (It seems that a number of skeptical commercial urchin divers and commercial fishermen have spoken out against formation of the marine parks.)

The Parks Department will be holding a series of public hearings in Port Orford and Depoe Bay, Oregon, after which the Parks Commission will make its decision about the fate of the parks.

marine life encountered, and underwater photo opportunities available. Archival photos of the seaworthy vessels and underwater shots of them in their present condition illustrate virtually every page. Practical tips on equipment needed, wreck diving safety and emergency procedures are directed to both beginning and advanced divers.

For more information, contact Pisces Books, a division of Gulf Publishing Co., Dept. 06, P.O. Box 2608, Houston, TX 77252; (713) 520-4444.

If You Want it Done Right, Do It Yourself!

Roland Wheeler of Fontana, California, caught this yellowtail at Catalina Island with a hand-built spear gun. Wheeler is a member of the Fathomiers Underwater Hunting and Freediving Club of Los Angeles. This 25-member club devotes itself to big game (white sea bass, yellowtail, tuna and Sea of Cortez game fish) and competitive spearfishing without the use of scuba gear. But the club takes the competitive spirit a step further; members hunt almost exclusively with equipment they make themselves.

Grab Your Camera and Come On By!

Orange County photographers! Join up for some fun at the Orange County Underwater Photographic Society (OCUPS).

This dive club is open to any underwater photographer, and meets the second Tuesday of each month at the Fountain Valley Library, 7565 Los Alamitos, at 7 p.m. Each month the club presents guest speakers and holds its own photo contest. For more information, contact Larry Thompson at (714) 962-1693.

Rent Your Own Dive Boat While Diving Monterey

Club Nautico offers 22-foot Hydra Sports powerboats and 14-foot Yukon inflatables to Monterey scuba divers. The 22-footers feature a stern dive platform and accommodate up to six divers. The inflatables have tank racks and hold up to four divers.

Located in the Breakwater Cove Marina next to the Coast Guard pier on

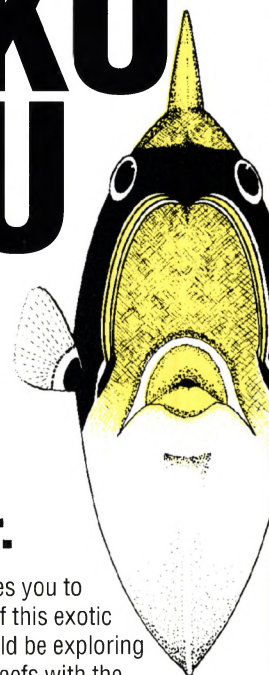
Gulf Publishing Releases Its SoCal Wreck Diving Book

January was the release date for the *Guide to Shipwreck Diving: Southern California*, published by Pisces Books, a division of Gulf Publishing of Houston, Texas.

The new book is a blend of undersea adventure and maritime history. A total of 29 shipwreck sites — including the *Ruby E*, sunk on July 18, 1989 — are covered in this guide to the waters off Santa Barbara, Ventura, Los Angeles, Orange and San Diego counties.

After a brief historical account of the sinking, author Darren Douglass provides details on the artifacts recovered, typical

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DIVERS UPDATE

Monterey's Cannery Row, Club Nautico's operations manager Harvard Davis and cruise director Deanna Heres offer their knowledge of the Monterey Bay area and will help divers get to the best diving spots.

Club Nautico has five California locations and over 65 locations throughout the U.S., including Hawaii, the Florida Keys, Puerto Rico and the Virgin Islands. By being a member of the club you can get discounted rates of up to half off the standard rental fees at any location.

Boats are available to qualified adults by the day, half-day or by the hour. Club Nautico is open seven days a week. Reservations are recommended. For more information, call (408) 373-4448.

Get Ready for a Really Good Shooo!

The Seaviews diving show is back for its third consecutive year, and will be featuring a film festival, seminars and the Northern California UPS International Photo Competition. The show is scheduled for March 24 and 25 at the Oakland Hyatt Convention Center.

New Park at Monterey's Breakwater. A Good Idea?

Monterey businessmen and the Parks Dept. are talking about building a new park at the breakwater in Monterey, but to do so they will have to eliminate 84 present parking spaces in an area where dive parking is already limited. Some businesses have indicated a willingness to open up some street parking to divers, but at this point there are no guarantees.

What do you think? Send your comments about this proposed park to Mayor Dan Alberto or the city council, City Hall, Monterey, CA 93940. It would be nice if divers could have a say in this decision.

Sea Center Announces New Island Trip Schedule

For 1990, the Sea Center of Santa Barbara has lined up a number of trips to the Channel Islands. These excursions are inexpensive and a lot of fun, and enable people to experience the unusual beauty of our offshore islands and the ocean sanctuaries that surround them.

The schedule for 1990 includes:

March 31 — Point Conception

A boat tour along the coast from Santa

Barbara to Point Conception. The boat will anchor for lunch in Cojo Bay, where gray whales are commonly observed in the kelp beds. Cost: \$65 for museum members, \$75 for nonmembers.

April 21 — Santa Cruz Island

Naturalists will lead a natural history walk from Willows Beach to Coches Prietos Beach. This will be a very strenuous walk, so only those in good physical condition should sign up. Cost: \$70 for museum members, \$80 for nonmembers.

May 19-20 — Santa Rosa Island

Two days of exploring a variety of plant communities, including the rare estuary at the east end of the island. Participants depart Santa Barbara Friday evening aboard the *Condor*, arriving at the island Saturday morning. Saturday night will be spent on the boat. Cost: To be announced.

July 21 — Santa Cruz Island

Naturalists will lead a moderately strenuous walk up Coches Prietos Canyon along a dirt road. There will be time for snorkeling at the Coches Prietos anchorage and lounging on the beach. Cost: \$65 for museum members, \$75 for nonmembers.

September 22 — Santa Cruz Island

This field trip will tour the northern shore of the island by boat, including a visit to Painted Cave. The group will then land at Prisoner's Pier, and from there participants will take a guided walk to the Stanton Ranch. Cost: To be announced.

October 18-20 — Channel Islands

A three-day dive trip emphasizing underwater photography and natural history, including plants, fish and invertebrates. Local photographer Tom Campbell will serve as dive master and photography teacher. The Sea Center will offer an orientation session/workshop on Saturday, October 13, to help participants prepare for the expedition. Cost: To be announced.

November 2-5 — Santa Cruz Island

The special emphasis of this four-day trip to Christy Ranch will be on the intertidal areas. The trip is scheduled during a very low tide sequence. Participants will also have an opportunity to take jeep rides and hikes to enjoy the island's natural history. Cost: To be announced.

Please note that all Santa Cruz Island trips, with the exception of the Christy Ranch trip, are tentative. For more information about costs, how to sign up, etc. call the Sea Center at (805) 963-1067. ■

SQUID AND OCTOPUSES

Cephalopods are the world's most advanced invertebrates, but at the same time, they are living fossils whose body plans evolved more than a half billion years ago.

I've always been a big cephalopod fan. A chance encounter with one of these beautiful animals can turn a routine dive into a special occasion. This group of sophisticated mollusks (whose name translates as "head-foot") includes octopus and squid, fairly common inhabitants of the diver's world. At first glance you may not be impressed by these distant relatives of snails. But look again — these creatures are the world's most advanced invertebrates, with eyesight and intelligence surpassing many backboneed animals.

Complex Creatures Dating Back to the Dinosaurs

Though they are complex and elaborate, cephalopods are living fossils. Their basic body plan evolved more than half a billion years ago, and the group reached its greatest success around the time of the earliest dinosaurs. Their numbers have dwindled since then; today, only about 450 species of cephalopods remain alive.

The molluskan body is limited by simple architecture and a lack of internal bone. Cephalopods, dependant on the basic molluskan body plan, are like a 1959 Cadillac — heavy and substantial but hard

to modify to compete in today's light, fast automobile market. The cephalopods have many exotic "bells and whistles" attached to their primitive chassis — the equivalent of ABS brakes and twin turbochargers stuffed into a '59 Caddy — but like the old car itself, they have a hard life in today's world of Porsches, 735is and 500SLs. (What marine animals represent modern cars? The wildly successful fish, mostly. The fact that there are 30,000-plus species of fish around, and only 450 species of cephalopods, tells the tale.)

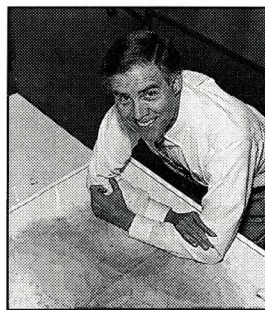
But it's those "bells and whistles" that make cephalopods wonderfully interesting. For example, most cephalopods possess a highly developed form of jet propulsion. Plus, many species are surprisingly intelligent, sporting brain power equivalent to that of a dog. Nearly all cephalopods are masters of camouflage, and a few can change color and texture in an instant. Various cephalopods can squeeze through very tiny openings, fish with lures, poison their prey with violent salivary neurotoxins, plan attack strategy, navigate over long distances, mate continuously for days at a time, and even fly through the air. And finally, two have evolved vast size — the giant squid *Architeuthis*, for example, reaches a length of more than 20 meters (60 feet) including

tentacles, and the largest known octopus had an arm span of nine meters (30 feet)! Are these boring animals? Hardly!

Be Aware of Coloration, Shape, and Cephalopod Behavior

Most octopuses and squid have superb eyesight. Consequently, a cephalopod almost always sees a diver before the diver sees the cephalopod. A human encounter with an octopus usually begins with a slight miscalculation on the animal's part — it moves too soon. The octopus will have withdrawn into the rocky bottom to fine-tune its color as it sees you approach. It freezes, depending on its skin for camouflage. Most of the time the chromatophores — tiny colored umbrellas just beneath the skin surface — will be configured to mimic the color and texture of the surroundings so effectively that you'll just swim right on by. However, if it gets nervous, a tentacle tip may flicker, and then you'll notice.

If you try to touch the animal once it's been discovered, it will flash a "false eye," a concentration of chromatophores designed to terrify any predator into thinking this animal is really too big to attack, or it will change its skin sculpturing to roughen the surface, like a cat frizzing up its fur in the face of danger. Stick around



Octopus bimaculoides

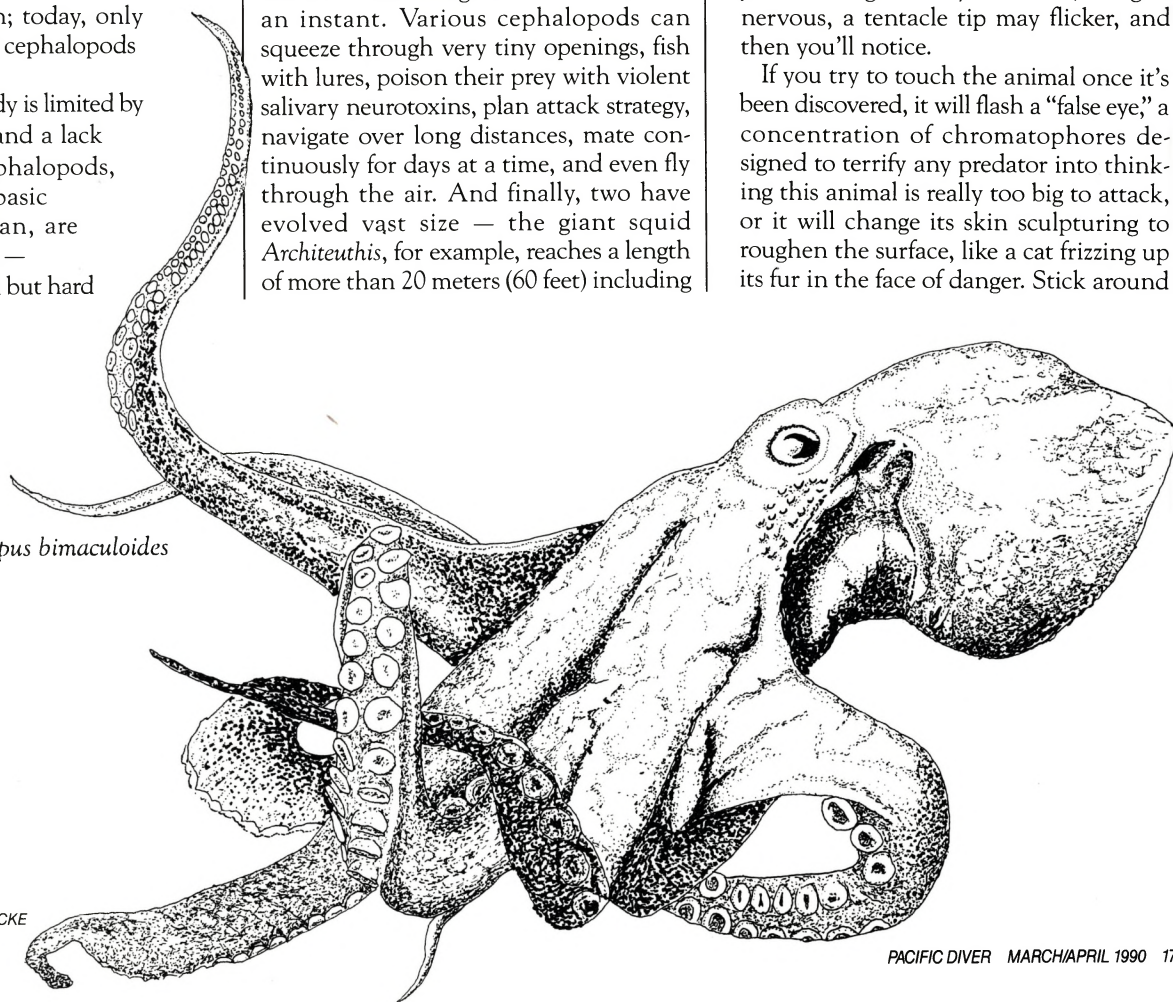


ILLUSTRATION BY BILL JAENICKE

even longer and you may get a jet of ink. The ink is irritating to gills and, more importantly, shrouds a timely escape.

If deception and flight fail, attack with the sharp central beak will follow. Fending off an angry eight-armed assailant is not easy.

Being constant swimmers, the squids' tactics for avoiding trouble are somewhat different. However, like the octopus, a squid's skin also plays an important role in evasion. In addition to color-changing chromatophores, squid skin has numerous iridocytes with mirror-like reflective surfaces. When threatened the squid can open the iridocytes and, astonishingly, disappear! These tiny shining umbrellas reflect ambient light back in the direction of the attacker. The camouflage works so effectively that a whole school can flash into hyperspace and jet off before you know what happened.

Predators, especially sharks and fish of the mackerel family, are more adept at following a squid's deceptive movements than divers are. Because of this, squid reserve a special surprise for them. Divers who have witnessed attacks on the common Pacific squid *Loligo* have seen individual squid in the school simultaneously release dark squid-sized cigar-shaped objects. This stuff is coagulating ink — a dummy squid. With a whole bunch of these fakes around, the squid open their iridocytes, fade out, and accelerate to Warp Five. Result: hungry, confused fish chasing shadows.

Deep-water squid have other tricks. Some have glowing skin organs (photophores) to attract mates and confuse prey. Sensing an attack, one species reportedly runs lights down its body in one direction (like the Goodyear Blimp) and then escapes in the other direction. My favorite trick is the "flashbulb-ink" ploy. What good is dark ink in the realm of permanent darkness? None! What to do? Make the ink glow! An attacker is blinded by a sudden strobe of sparkling ink.

A cephalopod's rapid locomotion is by jet propulsion. Octopus and squid both have muscular cavities from which water can be forcefully expelled through steerable nozzles. The muscles around the cavity are the animals' strongest. One species of squid can squirt water with such force that individuals can break free of the water and glide for several hundred feet on expanded fins and arm keels! However, most squid just cruise around in the water, using the small fins on the leading edge of their bodies for vernier control. Octopuses, which are bottom dwellers, are less apt to jet away from their hiding places, but will take off when provoked.

Pacific Cephalopods Found From Baja to Alaska

The combination of beauty, trickery

FENDING OFF AN ANGRY
EIGHT-ARMED ASSAILANT IS
NOT EASY.

and intelligence in an animal is undeniably attractive. Most eastern Pacific species are retiring creatures that will go out of their way to avoid confrontation, so you'll need to keep your eyes open to find them. Octopuses are the most frequently encountered cephalopods. Look for *Octopus bimaculatus* in Southern California and Baja California on rocks, in caves, and at the base of kelp beds to depths of 50 meters (160 feet). *Octopus bimaculoides* is found farther to the north and at shallower depths. Older, larger animals of both species are found at greater depths than

Say What?

Octopuses? Octopi? Which is it? Well, preferably it's octopuses. "Octopus" is derived from the Greek "octo" (eight) and "pous" (foot), an obvious reference to the animal's four pairs of legs. More than one octopus is "octopuses" because plurals of Greek derivation conventionally end in -es, while plurals of Latin derivation are formed by adding -i to the root. Dictionaries usually list both plurals, but list -es before -i. Confused? Well don't be; it really isn't all that important.

Something that is important, though, is the matter of pronunciation. You see, "octopus" is pronounced differently than "octopus." Now I bet you're really confused!

The key is in how you're referring to the animals. If you mean the common name (as in "Eeeek! Look at that 600-pound OCTopus!!") you'd pronounce the word with the stress on the first syllable. However, if you're referring to the scientific name of the creature (as in "Eeeek! Look at that 272-kilogram OcTOPus dofleini!!") you'd pronounce the word with the stress on the second syllable.

Sound weird? Latin and Greek are sometimes that way. We biologists apologize for any inconvenience.

younger, smaller ones. Even farther north, adventurous divers may find *Octopus dofleini*, the aptly named Giant Pacific Octopus. This is the monster that can attain an arm span of nearly 30 feet (and a weight of 600 pounds)! Most specimens, thankfully, are smaller. *O. dofleini* is most common from Alaska to Washington and is rarely seen south of Central California.

The most frequently seen squid is *Loligo opalescens*. These seven- to 10-inch-long rockets travel in schools of 10 to 100 individuals and feed on small fish and plankton. Most of the time they're skittish, and you must let them come to you. Early in April, however, near the end of their brief one- or two-year lives, they assemble at night in huge breeding groups of thousands of individuals. They come from hundreds of miles away to these breeding grounds, and are so preoccupied with mating that they will hardly notice you at all. The sites are usually in 50 to 80 feet of water. Divers tend to hoard information on how to find these breeding locations, but inquiring at a local dive shop may yield rewarding results. I have not yet seen the two- or three-day breeding spectacle myself, but friends who have seen it invariably say it is the most impressive thing they have ever seen in all their years of diving. Imagine countless squid locked in mating embraces for as far as you can see, their chromatophores and iridocytes flashing over a bottom uniformly carpeted with mop-like egg cases for hundreds of square meters in all directions.

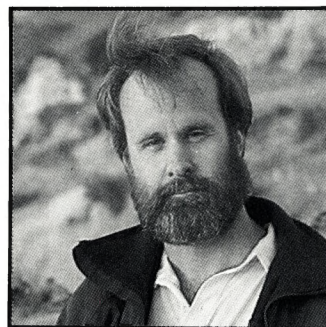
The eggs and egg cases expand and toughen after they're cemented to the bottom (and to each other). The squid die after their single mating, and their lifeless bodies litter the bottom above the egg cases. A few weeks later the babies will hatch, drift in the plankton, grow, and change into the kinds of fast, tricky, beautiful animals that have been a part of the ocean for 250 million years.

This is a good time of year to plan to visit your local cephalopods. A good sighting can make all that cold water seem worthwhile, especially if you're in the right place during those first two weeks in April. I wonder if any breeding grounds are near artificial reefs containing old Cadillacs? ■

Dr. Tom Garrison heads the Marine Science Department at Orange Coast College, the largest undergraduate teaching department for marine science in the U.S. He holds national awards for teaching excellence from the Marine Technology Society and the Salgo-Noren Foundation, coauthored the PBS series *Oceanus*, and is the author of a new text in general oceanography soon to be published by Wadsworth.

OFFSHORE OIL SPILLS

Thanks to the rejuvenating powers of Mother Nature, the Valdez disaster is on its way to being cleaned up. But can we always count on nature to bail us out of these ecological disasters?



In March 1989, the oil tanker *Exxon Valdez* hit an Alaskan reef and tore a hole in its hull. Over 11 million gallons of crude oil poured into the pristine waters of Prince William Sound. A few days later this crude oil washed ashore, blackening 1,200 miles of Alaskan beaches.

It was a terrible disaster, and anyone with a love for the ocean clearly felt diminished by the damage that it caused. Alaska is a long way away, but all we have to do is ask ourselves, just what if the *Exxon Valdez* had run aground in the San Juan Islands or off the Monterey Peninsula or in the Catalina Channel? What if the shorelines of our islands were smothered in black muck and our sea life was lying dead all around us?

The *Exxon Valdez* disaster was the worst oil spill in U.S. history. But when you put the *Valdez* incident in a worldwide context, the 11 million gallons of crude oil Exxon dumped on Prince William Sound was small potatoes. One of the biggest spills the world has ever seen occurred in 1978 when the *Amoco Cadiz* dumped 68 million gallons of oil on the coast of France. So, considering the *Exxon Valdez* was carrying over 53 million gallons of crude oil when it hit the reef, if you close your eyes and hop on one leg you could say that the Alaskans were lucky.

It has now been a year since the *Exxon Valdez* did its damage. Let's take a look at the Prince William Sound catastrophe and see what we can learn about oil spills and the methods used to clean them up.

Nature Comes to the Rescue

Oil spills normally have two stages: the offshore stage, and the onshore stage. In the offshore stage oil flows out of a hole in a crippled tanker and floats on the surface of the ocean. From the moment the oil seeps out of the ship it is subjected to physical and chemical weathering processes which begin to change the composition of the oil.

Crude oil does more than just float on water; it reacts with the water chemically, evolving in time into an oil/water mixture

resembling chocolate mousse. How does this happen?

Crude oil is made up of a series of chemical components. When it is exposed

IF YOU CLOSE YOUR
EYES AND HOP ON
ONE LEG, YOU
COULD SAY THE
ALASKANS WERE
LUCKY.

to the elements in an agitated offshore environment, different chemical components become separated from the original crude mixture. For example, in the first few weeks immediately after an oil

spill, as much as 25 percent of the oily chemical mixture evaporates into the atmosphere. At the same time, beneath the oil layer, the portion of the crude that is dissolvable in sea water sinks to the bottom as microscopic particles. As chemicals evaporate in the air and sink to the ocean bottom, the remaining oil/water mixture thickens.

The sun also gets into the act. Not only does it accelerate the evaporation process, but it actually reacts with some of the chemical components breaking down the oil, enabling more chemical by-products to dissolve in water.

Microorganisms play a role in the breaking down of crude oil as well. They ingest and digest more oily components into dissolvable compounds. Once a portion of the oil becomes dissolvable it can then be diluted in sea water and removed by ocean currents. Add the mixing action of waves to this mess and what results is an oil/water froth called a "mousse" by scientists. Eventually, over the course of months and months, under constant exposure to the elements, this mousse gets hard and brittle. As it washes up onto shore, the mousse gets beat against the shoreline by waves and breaks down into "tar balls" that wash up onto the beach.

Once it's on land oil does something that it has a hard time doing in water — it



What if the *Exxon Valdez* had run aground in the San Juans or off Monterey or in the Catalina Channel?

sinks. The more porous the beach, the deeper the oil sinks.

Beaches with fine-grain sand are not as porous so more of the oil stays at the surface. When waves beat down on a sandy beach, mixing the oil/water mousse with the fine grains of sand, a very thick mixture is formed that is heavier than water. As this tar-like mixture sinks it smothers all life in the area.

Luckily, in Alaska this occurred only in a few remote areas, partly because a specific combination of big waves on a sandy beach is required to create this particular situation. Alaska is actually doubly lucky in this respect, because once oil contaminates a fine-grained shoreline, both nature and man have a hard time cleaning it up.

Rocky and pebbly beaches were more fortunate, because rocks and waves actually work together to clean up oil. As waves break over the shoreline, rocks tumble. The friction created by this movement burns up the oil. In this way, if given enough time, rocky beaches become self-cleaning.

Bacteria living on beaches also help in the cleaning process. Specific strains of bacteria love to eat oil and, once again, if given enough time, they can restore a beach to its original luster on their own.

DIVING
CALIFORNIA'S
BEST OFFSHORE
PINNACLES.
IN THE MAY/JUNE
ISSUE OF
PACIFIC DIVER



**A necessary evil.
Drilling platforms
supply us with much of
our energy needs, but
jeopardize the
ecological balance of
our coastlines.**

Studies have shown that the addition of a specific type of liquid fertilizer accelerates this process. The fertilizer is made out of a detergent (shampoo) and urea (a nitrogen compound) — two components that bacteria love. On some test beaches these critters have cleaned up oil down as deep as 12 inches below the surface of the sand. However, some experts argue that these fertilizers can trigger massive offshore plankton blooms which can suck all the oxygen from the water, killing all marine life for miles around.

Man Lends Nature a Hand

For man, an oil spill occurring in open water offers the ideal cleanup situation. One of the main pieces of equipment used in the offshore portion of the Alaskan battle was the boom. This is a mile-long floating wall that extends down three or four feet below the surface. Pulled by boats into a U-shape, the Alaskan booms contained the floating oil so that it could be sucked up by skimmers. Unfortunately, in Alaska the mousse, after mixing with kelp and other debris, was too heavy to pump. So conveyor belt systems had to be employed to get this thick substance out of the water and onto the barges.

Onshore, the cleanup process was even more complex. High pressure hoses directed heated water onto deposits of

thick oil. Other cold water hoses washed the loosened oil/water mixture into the ocean, where long booms stretched parallel to the beach trapped the sludge so skimmers or conveyor belt systems could load the contaminants onto barges.

But the process of a high pressure hose spraying 140-degree water on the rocks has its downside. As it washes the oil into the catch basins, it also kills shoreline organisms, creating a situation where the cure may be more harmful than the problem.

Also used to clean up Alaska's shoreline were pompoms, rags and mops soaked in a solvent called polypropylene. Using this solvent, the coastline was cleaned up, rock by rock, but by the time the crews quit work only about 20 percent of the affected coastline had been cleaned.

Looking Back, One Year Later

Today, a scuba diver exploring the frigid waters of Prince William Sound would probably rate the water quality as excellent. Studies of water samples taken all over the Sound as well as at Kodiak and along the Alaskan Peninsula still show chemical contamination from dissolved oil, but these test results measure in the parts per billion.

After a year's time, rocky beaches with lots of wave action have little oil residue. However, on sandy, low-wave-energy beaches oil is still working its way to the surface. Experts predict that these sandy beaches will show the effects of the oil spill for years to come.

Bird and fish populations tend to regenerate quickly. But studies of ecological contamination continue. In September 1989, studies of over 5,000 fish by state inspectors showed no crude oil contamination. Initial studies of juvenile herring, which spend most of their early lives in shallow shoreline waters, are indicating good survival rates, but tissue sample testing is still being done.

And an extremely close monitoring of the pink salmon population is currently being performed. Salmon that came down the rivers during the spill have been tested for toxins. But surprisingly, tests show no oil-related mortalities. What's more, studies of the percentage of salmon that have returned upstream to spawn have shown a very high spawning run this year.

The effects on free swimming fish and bottom dwelling critters like shellfish seemed to be more subtle. Studies done months after the spill showed no contamination to free swimming fish. But bottom dwellers like oysters did show an elevation in toxic contamination. Many of these critters have natural "purging"

Battling Oil Spills with Chemicals

One area of oil cleanup science that was not used much in Alaska was chemical cleansers. Early in a typical cleanup, before the oil drifts ashore, chemical dispersants are normally an option. Dispersants are sprayed on the oil from the air, breaking it up so it will be dissolvable in water. Unfortunately, in Alaska the decision to use the dispersant was delayed too long. By the time permission was finally given, the weather had stopped cooperating (70-knot winds started battering the area). When the weather finally cleared the oil had spread out over too large an area for the available 40,000 gallons of dispersant to even make a dent.

Absorbent chemicals can also play a major role in cleaning up oil spills. Here again, in Alaska the lack of supplies prevented the use of these absorbents in the initial stages of the cleanup. One such product is made with polyisobutylene which also provides the "chew" in chewing gum. Called Elastol, this product can be spread over an oil spill with a blow gun. What it does is cement the entire spill into an elastic bubble gum pancake, which allows the spill to spread without breaking into those nasty tar balls that make their way to shore.

systems that rid them of toxins. But these studies are still inconclusive.

Whenever a toxin of any kind enters the food chain the overall environmental effect becomes very difficult to measure. Like the branches of a tree, the toxin trail keeps splitting. Toxic effects of a spill might not surface until years later.

It will take that long to find out what the long-term effects of this oil spill will have on the ecosystem. The effects of cleanup programs on the tidal and intertidal ecosystems will take years to ascertain. But this disaster has demonstrated again that nature has its own way of repairing the damage that man does to it. All the man hours and money spent in the Prince William Sound cleanup program accomplished only about five percent of what nature will ultimately do by itself over the course of the next three years.

As a diver it is a relief to know that an ecological disaster of this magnitude can be "fixed" by Mother Nature. But as a citizen of Planet Earth, I wonder how much longer we can count on Her to bail us out when we get into trouble. ■

Rick Baker studied marine geology at the Moss Landing Institute at Moss Landing, California, and holds degrees in chemical oceanography and geology.

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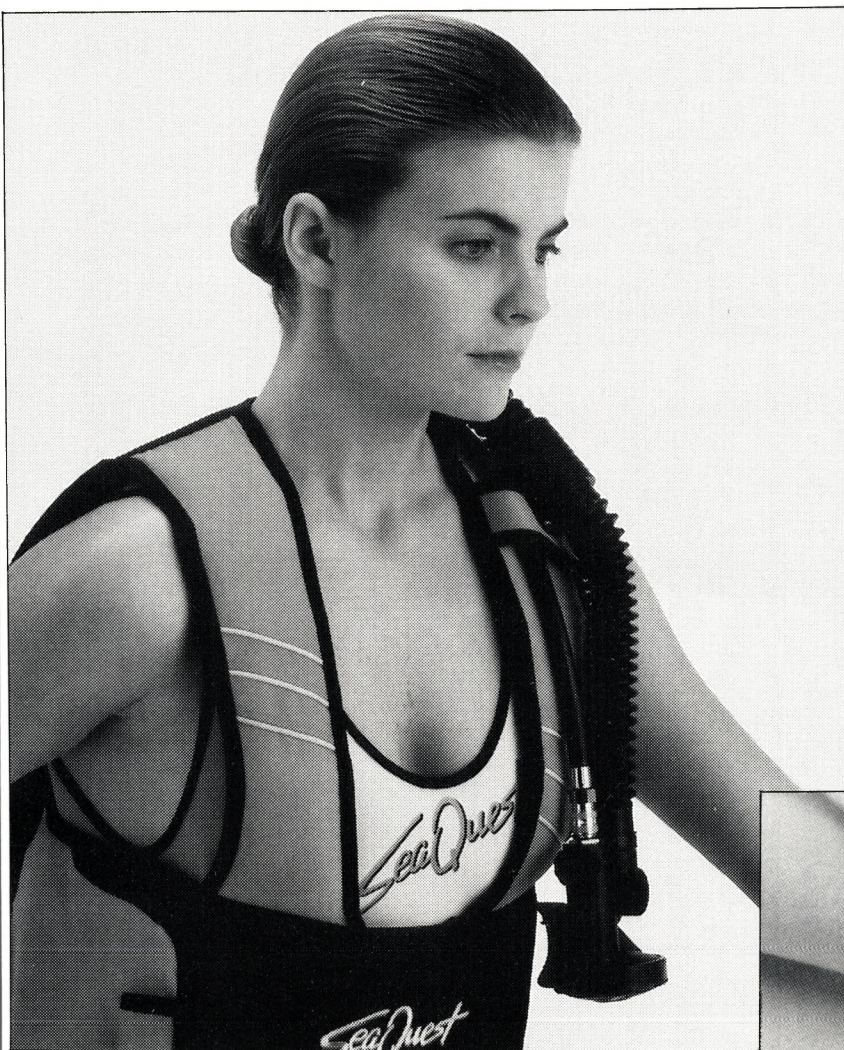
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A traveler's BC, SeaQuest's Explorer offers a padded body harness that will roll into a tight bundle for packing.

1990 DEMA Highlights



The Oceanic Delta is a definite contender in the adjustable second stage market.

What's Hot,

and What's Not

Springtime's approaching, when the thoughts of all self-respecting scuba divers turn to "new dive stuff."

Each year, most sport diving manufacturers unveil their new equipment lines at the Diving Equipment Manufacturers Association (DEMA) show held in late January.

At this year's DEMA show in Orlando,

Florida, we had the opportunity to spend four days wandering through an enormous meeting hall filled with elaborate equipment displays, affording us a sneak preview of the new dive gear that will be appearing on dive store shelves in the months to come.

Like always, most of the equipment looked pretty good. However, there were a few interesting pieces of gear that caught

our collective eye, both in terms of stealing our scuba diver hearts, and in causing us to shake our heads in wariness.

Of course, we don't have a crystal ball, and the products that look good to us may turn out to be turkeys, while the ones we turn our noses up at could become tomorrow's latest rage.

But for what it's worth, following is a sampling of many of the dive products that



Tabata's Liberator XTen took the industry by storm last year, and is now available in a smaller version in a rainbow of colors.

got our attention this year, for better or for worse.

THE DIN IS IN!

The DIN valve, a high pressure "threaded" valve allowing adapted regulators to accommodate cylinders of higher working pressure, was first introduced to the American diving market a couple of years ago by Sherwood with its Genesis line of tanks. The DIN valve is no stranger in the European market, where higher pressure cylinders are commonplace. The concept is finally receiving greater acceptance in the American diving industry; DIN valves on higher pressure tanks have been introduced by both U.S. Divers and Catalina Cylinders, and we can probably expect to see more DIN-valved tanks introduced by other manufacturers in the future.

As an accessory, U.S. Divers now makes DIN valve adapters to enable owners of existing U.S. Divers regulators to use the new DIN valve-equipped cylinders. Oceanic USA and other manufacturers have followed suit with their own DIN valve regulator adapters as well. Now more divers with standard regulators can retrofit them to work with DIN valves, thereby benefiting from higher air capacity.

BLACK SILICONE IS BACK

You're going to be seeing a lot more black silicone used in masks and snorkels this year, based upon what has been introduced by Tabata, Sherwood, U.S. Divers, Mares, SeaQuest and others. Of course, black silicone is nothing new, but its benefits are slowly being re-realized by the diving populace.

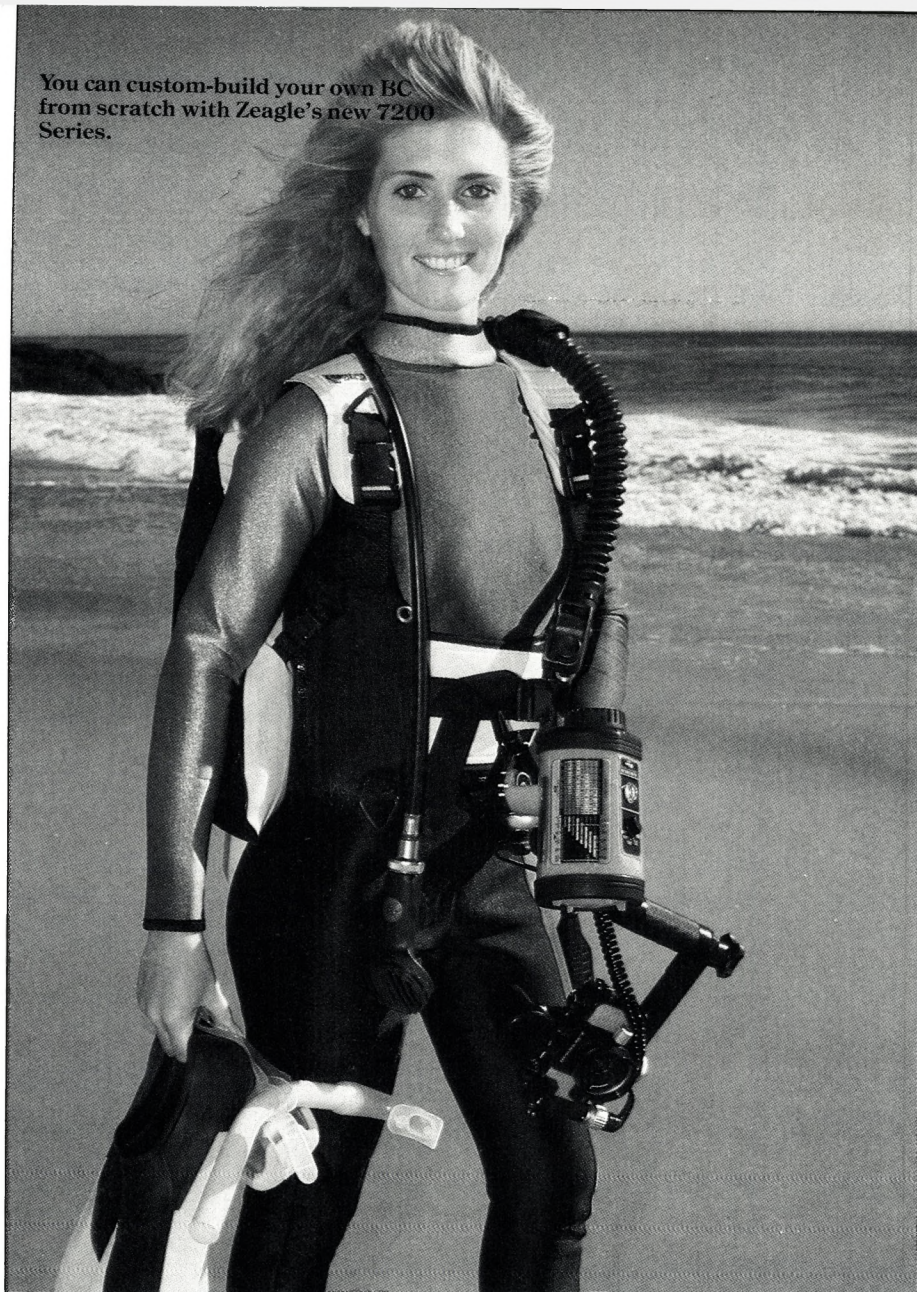
When clear silicone masks took the market by storm back in 1980, divers found themselves with masks that could withstand deterioration, unlike the traditional rubber materials of the day. Underwater photography models suddenly appeared more photogenic, since the extra light entering through the clear mask skirt helped to illuminate their faces.

But on sunny days this additional light could become excessive, creating a variety of visual disturbances. The introduction of the black silicone mask skirt has eliminated this particular problem. And while no one expects clear silicone masks to disappear anytime in the future, the emergence of black silicone (or other dark pigments) is bound to recapture a significant portion of the mask market. For serious photographers and spearfishermen who want no visual distractions at all, black silicone masks are a logical choice.

A NEW RANGE OF REGULATORS

Sherwood's Maximus. It's been a long time since the diving equipment market has seen something truly innovative in

You can custom-build your own BC from scratch with Zeagle's new 7200 Series.



high performance regulators (after all, how many times can the wheel be reinvented?). But this year Sherwood Scuba has introduced the Maximus, and there are several features that set it apart from other regulators on the market. First is the hose-routing design. The second stage hose routes *underneath* the right arm rather than over the right shoulder. The second stage itself has a two-way swivel to allow you to turn your head easier while minimizing jaw fatigue.

The swept back design of the second stage design in a way resembles Darth Vader's helmet, but there's more going on here than cosmetics. The purge valve is built into the flexible second stage casing (eliminating the possibility of getting sand into your purge button during a beach dive).

Oceanic's Delta. This is another adjustable second stage regulator that actually made its debut last year, but the



A PD favorite, Beuchat's Aladin Pro deco computer is compact, simple to use, and provides a wealth of diving information.

diving public will certainly be seeing more of it in 1990. Delta's effortless air delivery system plus its versatility in resistance control make it a definite contender among the more established adjustable second stage regulators on the market.

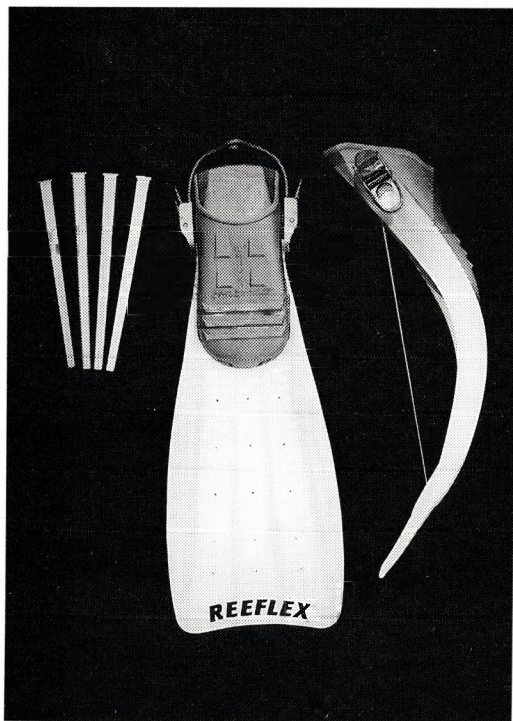
BUOYANCY COMPENSATORS: LESS IS MORE

Zeagle's 7200 Series. Zeagle is no newcomer when it comes to manufacturing a high quality back-inflation-style BC. At a time when personalizing your BC is mostly a matter of switching colorful pockets or inserting colored battens, with the Zeagle system, instead of merely swapping pocket colors, you can custom-build your own BC from scratch.

Zeagle's 7200 Series is what you might call the "salad bar" approach to building a BC. The premise is simple: divers can select their preferences in bladder assembly, shoulder harness assembly and cummerbund in the sizes and colors that suit them. For example, you can attach a large yellow shoulder harness to a medium blue cummerbund and a green bladder, and you've created a BC that not only conforms to your own personal body shape and size, but that satisfies any color or fashion goals you may be trying to achieve.

And since you can purchase components separately, if you happen to be a drysuit diver who often ventures to warm water dive sites, you can easily interchange shoulder harnesses and cummerbunds to provide yourself with a perfect BC fit,

Three Kevlar-reinforced battens enable you to adjust blade stiffness on Wenoka's Reflex fins.



Dacor's Mini Trivista provides a smaller version of the popular Trivista mask for smaller divers.

regardless of the bulkiness — or lack thereof — of your exposure suits.

SeaQuest's Explorer. The concept of the "travel"-oriented BC — a lightweight, low profile and easily packable unit — is starting to garner more attention among both manufacturers and sport divers. Here is a compact buoyancy unit available in six different sizes. The tough nylon outer shell and padded body harness make the Explorer a comfortable BC that rolls up into a tight little bundle for easy packing. And while certain adherents of diving theory might claim that the Explorer's 20 pounds of lift are lacking, the Explorer concept proposes that a properly weighted diver who is truly neutral on the surface doesn't need more than 20 pounds of lift to float comfortably on the surface and provide extra buoyancy at depth.

Tekna's Tek-Vest 190. This BC features many of the same concepts as the SeaQuest Explorer, with a few differences. There are fewer sizes available, but the Tek-Vest 190 allows for a little more sizing versatility with its adjustable straps. Tekna also features a unique one-touch buoyancy system that allows for rapid inflation or deflation, a standard feature now on all Tekna BCs.

UPL's "Sea Stalker" Hydrobactic. Here's a concept in BCs that's so simple and so efficient, it's either a complete sham, or it's the future in buoyancy control.

This back inflation unit provides 20 pounds of lift. The system features a power inflate-deflate mechanism which attaches to the regulator low pressure hose. When diving with this unit you experience drag-free, unencumbered diving.

What's its secret? Zip open the cordura bladder shell and you find... a motorcycle inner tube? That's right. Someone once

said, "Beyond complexity lies simplicity." Well, here's proof. It will be interesting to see what becomes of this new approach to buoyancy control.

FINS WITH A FLAIR

Tabata's Liberator XTen. Tabata introduced its XTen fin in standard sizes at the end of 1989. The fin was so well received that for 1990 Tabata has come out with a slightly smaller version of the fin in a rainbow of colors.

For an extremely flexible non-vented fin the XTen is surprisingly efficient. Expect to see the XTen give other established non-vented fins a serious run for their money in 1990.

Wenoka's Reflex Fins. This fin offers a unique concept in adjusting fin blade stiffness. Traditionally, if a diver wanted to graduate from a flexible fin to a model with slightly more stiffness, he would simply have to go out and invest in a new pair of fins. Not so any longer. With the Reflex fin you can adjust blade stiffness by inserting up to three Kevlar-reinforced battens. And for the fashion conscious, the battens are available in a variety of colors.

WHAT'S TO COME IN WETSUITS

Rumor has it on good authority that Sub Aquatic Suits is planning to unveil a high tech, heat efficient 4mm wetsuit with a titanium enhanced lining. The proposed wetsuit is supposed to be able to keep divers every bit as warm as a 6.5mm suit, but without the extra neoprene which requires divers to carry extra weight.

Will such a "stealth" wetsuit really fly? We don't know. But it's sure going to be fun watching to see what becomes of this innovative idea.

AN EITHER/OR MASK MODEL

Wenoka's Opti-Purge Mask. Here Wenoka takes an old concept and re-

defines it with high tech engineering. The Opti-Purge is a low volume mask that allows divers the choice of either a purge or a non-purge mask by simply snapping off a reusable plastic cap and pulling off a rubber plug. If you want to deactivate the purge, take a few seconds and simply reinstall the plug.

Dacor's Mini Trivista. Introduced in the latter part of last year, the Mini Trivista offers a smaller version of Dacor's long-popular Trivista mask. The Mini Trivista is approximately 15 percent smaller than the original, and is designed for smaller divers with more narrow faces.

The three lenses of the Mini Trivista are integrated into a lightweight frame, and a double feather edge provides a custom watertight seal for divers who have had problems with mask leakage. The mask is available in four colors to match most dive gear color schemes.

A FAVORITE IN DIVE COMPUTERS

Beuchar's Aladin Pro. The Aladin Pro is certainly not new for 1990, but since it's one of our all-time favorite pieces of diving gear, we thought we'd mention it as a computer to keep your eye on. The only piece of diving equipment so far that has captured a five star rating in PACIFIC DIVER's Product Reviews (see November/December '89 issue), the Aladin Pro is simple to use, and provides an amazing amount of diving information to enable you to safely maximize your time underwater.

AN ARRAY OF NEW ACCESSORIES

Underwater Kinetics' Tank Basin. This compact, sturdy plastic container is large enough to hold two cylinders and a variety of wet, sandy gear without making a mess out of your van, truck or trunk floor. The model comes with an optional set of wheels to simplify transporting gear (we'll see how long the wheels hold up). The wheel-less version can be used to sled a load of gear along a sandy beach. Both models can be filled with fresh water and used as a very effective equipment dip after a day of diving.

Submersible Systems' 2.7 CF Spare Air. This 3,000 psi auxiliary cylinder provides up to 60 percent more air than its 1.7 cf predecessor. This new version is slightly more compact, but due to its increased pressure it will be subject to annual visual inspections and hydrostatic testing every five years.

Dive Alert. This is an interesting signaling device that uses low pressure air from the BC hose to emit a loud blast with the press of a button. Operating on a air horn principle, its manufacturer, Ideations Design Inc., claims the signal can travel on the surface for up to a mile (so don't forget

to point it away from your ears when activating).

Underwater Kinetics' UK 400. The latest (and greatest) from Underwater Kinetics. A large dive light for the masses, the 400 is a scaled down version of the very popular UK 600. It uses four D cell batteries and provides 5.8 watts of power for up to 10 hours. And with a retail price of about \$45, it's a night diving light almost everyone can afford.

FROM THE PHOTOGRAPHY FIELD

Amphibico Housings. Amphibico, the builder of high quality aluminum housings for a variety of camcorders, can

now custom-build a housing for 2¼-inch Mamiya large format still cameras. It'll only cost you \$12,000.

Water Colors Film. Here's a new 100 ASA speed slide film which, according to marketers, will produce better color resolution with underwater subjects. The film itself is manufactured by a major film company; however, the guy in the booth wouldn't tell us who that major film company was. At any rate, the price structure is good enough to allow dive stores to finally carry film at a fair price for their photographic customers. And every purchase of a roll of film results in a donation

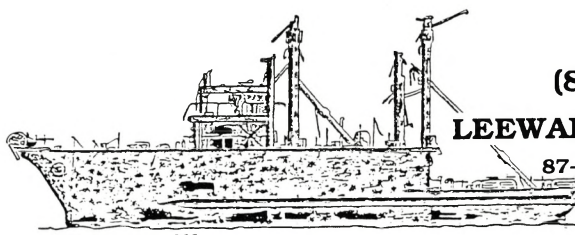
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made to D.A.N. How good is the film? Only time will tell.

WHAT'S NOT SO HOT

The products we encountered at the DEMA show for the most part appeared workable and sensible, which is a good indication that the diving industry is heading in a healthy direction.

But having said that, we must admit that there were a couple of products that made us raise our eyebrows a bit. In the final analysis they may be perfectly acceptable diving products, but they caused our collective stomachs to drop.

The Enriched Oxygen Breathing Apparatus (eOba). This breathing system is designed to enable users to reach a maximum depth of 16 feet for 10 minutes by way of the use of twin cartridges (about the size of a 36-gram CO₂ container). Apparently, the eOba is popular in Japan, where it is manufactured by Nippon Sanso, but the question is whether its design premise will be accepted in the United States.

A compact air delivery system is something all divers anxiously await. But if the eOba is intended to take the place of diving instruction, we may see users suffering from embolisms and O₂ toxicity, to name just a couple of the unit's potential problems.

Dive Man. How would you like to go diving with a self-propelled bellows pump that sucks air down through 20 feet of plastic tube whose top end is supported at the surface by a brightly colored "beachball" looking apparatus that acts as a snorkel and personal dive float? All you have to do is strap the "Dive Man" to your chest, attach straps to your feet and every time you kick, "Dive Man" sucks air down through the beachball and down the hose into a urethane bladder and bulbous housing that sticks in your mouth.

Hey, no more dive shop air fills, but you've got to kick like a wounded kangaroo to make the thing work. When you see the "Dive Man" in action on the videos the manufacturer supplies, the thing appears to do what it's supposed to do. But what happens when you stop kicking? After all, no kick, no breath. Uh, no thanks.

Well, that's all we have room for. But keep your eyes peeled to our Product Reviews section in coming issues, where we'll be getting a chance to actually use some of this new dive gear that looks so good in the display cases.

We're still waiting, however, for someone to invent a product that carries your tanks, maybe even takes them in to the dive store to get filled, and then pays for it. Now that would really be something!



▲ *Phyllidia varicosa* feeds on a red sponge in the clear waters off Maui, Hawaii. Photo by David Yuhas of Pacifica, California.

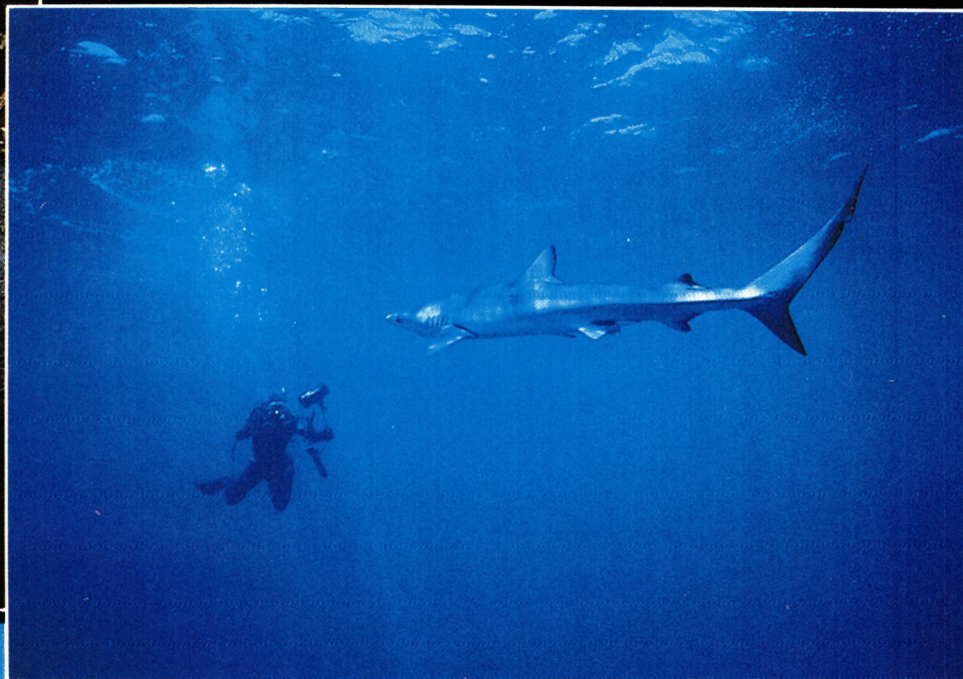


▲ A moray eel greets divers at the mouth of its lair at Mexico's Los Coronados Islands. Photo by Brian Johnson of Temecula, California.



▲ Large monkey face pricklebacks may appear menacing, but they are actually docile vegetarians that subsist primarily on algae. Photo by David Wrobel of Monterey, California.

▼ A blue shark moves in to investigate photographer Greg Volger off Mexico's Los Coronados Islands. Photo by Richard Herrmann of Poway, California.



Continued

PACIFIC DIVING

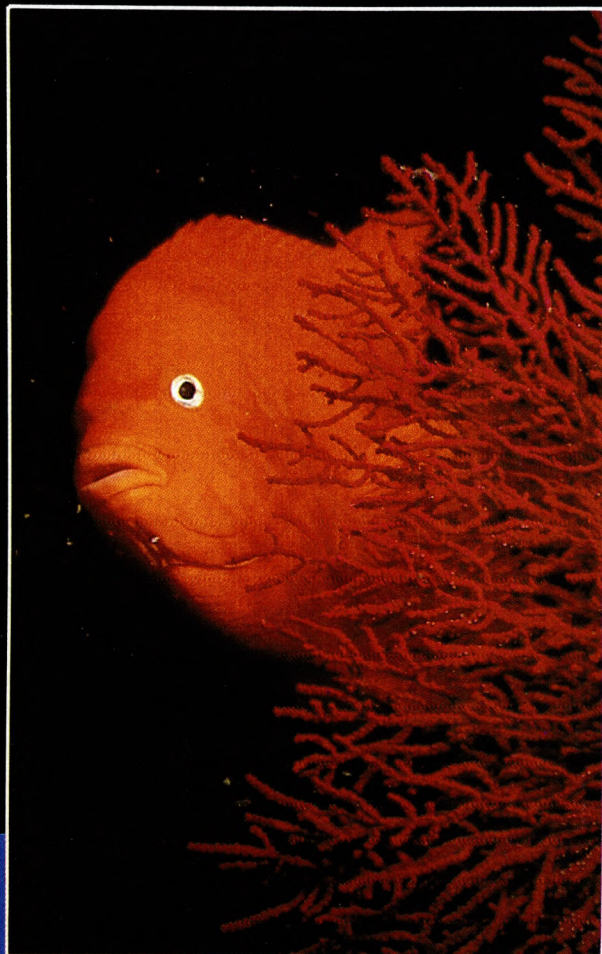


▲ "Mirror Image." A pastel anemone waves its tentacles in 60 feet of water at Palau, Micronesia. Photo by Ellen Ludwig of Colorado Springs, Colorado.

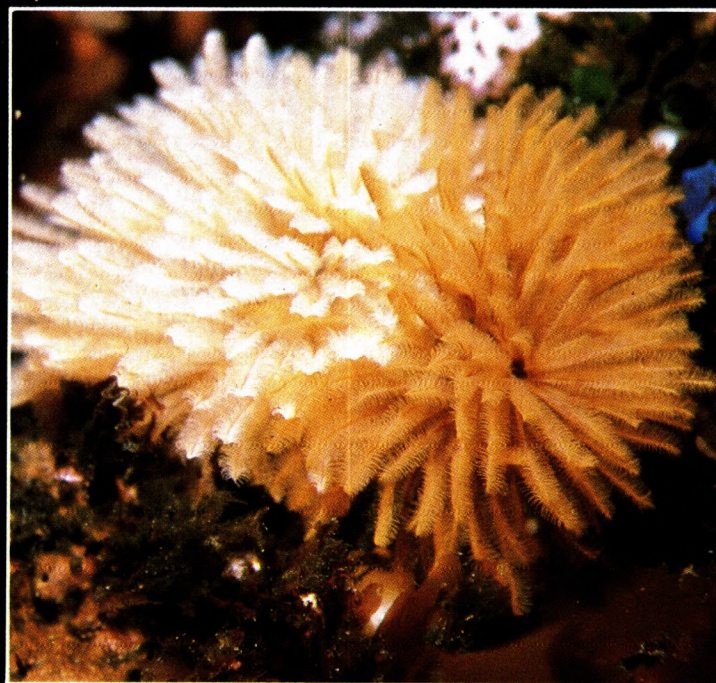
Schooling reef fish cloud the warm waters of Fiji. Photo by Ken Howard of San Anselmo, California. ▼



An adult garibaldi peers around a colorful gorgonian at Anacapa Island. Photo by Dean DePhillipo of Santa Barbara, California. ▼



Brown and beige feather duster worms provide a colorful contrast to the underwater landscape at Santa Rosa Island. Photo by Ron Cleary of Huntington Beach, California. ▼



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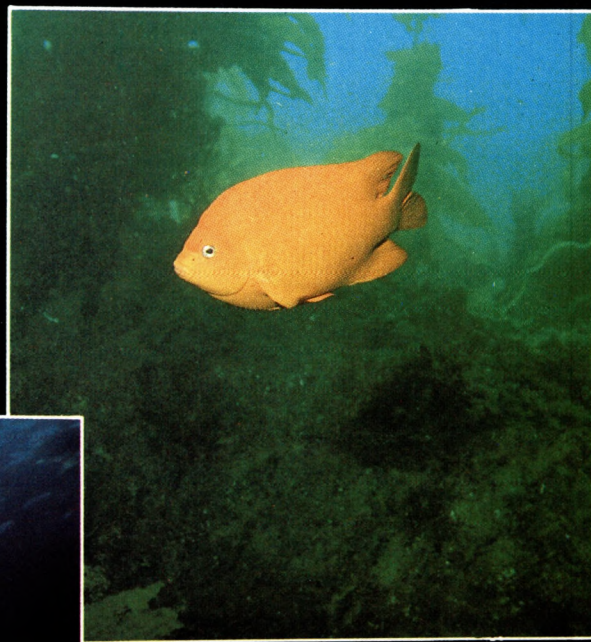
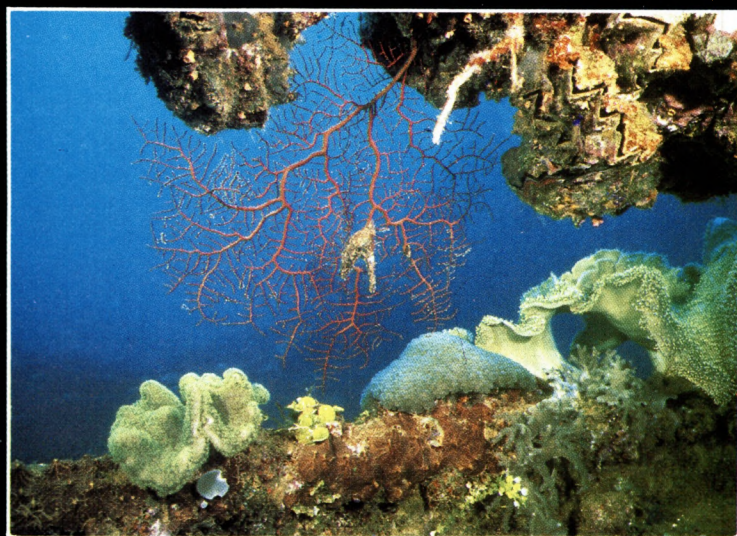
you've taken photographs that you feel represent the diving lifestyle, and you'd like to share them with other divers, we invite you to submit them to PACIFIC DIVER for possible publication.

PICTORIAL

The wreck of the Sankisan Maru in Truk Lagoon has been transformed into a kaleidoscope of coral color. Photo by Gilbert Cruz of Pleasanton, California. ▼



▲ An inquisitive sea lion inspects the photographer's underwater housing near Lobster Shack Cove off North Coronado Island. Photo by Greg Volger of San Diego, California.



▲ Garibaldi cruising Catalina Island's Bird Rock gets caught in a CIMI underwater photography session. Photo was taken by 13-year-old K.C. Ammann of Los Altos, California.



▲ Kelp bass are captured plying the waters in Casino Point's underwater park at Avalon, Catalina Island. Photo by Lee Sams of Seal Beach, California.

If your photo is selected, it will appear on these pages with a photo credit (\$25 will be awarded for selected photographs). To have your photos considered for publication, send your color transparencies to Editor, PACIFIC DIVER Magazine, P.O. Box 6218, Huntington Beach, CA 92615, with a sentence or two describing each shot. Photos must be submitted with a self-addressed stamped envelope to ensure their return.

Yawning, I climbed the steps from the darkened bunk room up into the spacious salon, lured by the smell of fresh coffee brewing in the galley. The cook was preparing a hot breakfast for a group of early risers, while a few others sat around tables assembling their camera equipment for the day ahead.

I ambled over to the coffee urn and poured myself a cup, then walked through the salon to the afterdeck, stepping out into the sunshine. The morning dew sparkled like diamonds along the railing, sea gulls and pelicans whirled high overhead. We were fast approaching Santa Barbara Island, that distant mound of rock 50 miles offshore, with its sea lion rookeries and underwater arches and boun-

A Boat for All Seasons

Article by Joni Dahlstrom

tiful marine life. We were out here on our own, cruising between clean skies and clear water, ready for a fantastic day of diving. Yes, this was living.

Boat diving along the California coast provides an entirely new dimension to sport diving. Access to the offshore islands and the relative ease of diving combine to make boat diving California's most popular form of sport diving. Out on a dive boat there are no crowds to fight, no parking problems to contend with, no trails or stairs to hike up and down, no beach sand to foul regulators, no shore breakers to battle. Out here there is only diving, relaxing, more diving, and more relaxing.



Close to 30 professional charter dive boats operate from San Diego to Monterey.



STEVE ESSIG

Lori Twilegar cools off between dives. Most dive boats feature hot and cold freshwater showers.

Photos by Rick Baker

There are close to 30 professional charter dive boats operating out of harbors ranging from San Diego to Monterey, as well as a substantial fleet of dive "six paks" (smaller dive boats rated to carry up to six passengers). These boats transport divers out to California's prime offshore diving grounds on weekends and selected weekdays throughout the year.

California's dive boat fleet offers dive trips to fit everyone's time schedule and pocketbook, from day trips to two- and three-day trips to even five-day trips that venture deep into Mexican waters. Single-day excursions, however, seem to be far and away the most popular among divers.

**WHEN MAKING YOUR
RESERVATION, BE
SURE TO ASK ABOUT
THE DIVING
ACTIVITIES THAT ARE
EXPECTED TO TAKE
PLACE ON THE TRIP.**



PUTTING TOGETHER YOUR BOAT TRIP

Before you can enjoy a day of boat diving you have to get on the boat, and before you can do that you have to determine where you want to go, what boat you want to take you there, and then make a reservation. The easiest way to find out about the chartering schedules of California's dive boat fleet is by checking the Dive Boat Schedules on page 60 of this issue. These schedules list what boats are going out on what days, and often include their destinations.

Dive boats separate their trips into two categories: "Open Boat" and "Charter." Open boats are just that — open to anyone who wants to sign on. You make your reservations by calling the dive boat directly.

A charter trip is one where the boat has been chartered by a dive store or a dive club. The names and numbers of the chartering parties are listed in the Dive Boat Schedules. To reserve a space you would call them instead of the boat.

When you call to make your reservation be sure to ask about the types of diving activities that are expected to take place on the trip. For example, a particular dive trip might be geared to underwater photography, spearfishing, lobster hunting, wreck diving, advanced divers only, or it may be

a boat filled with students making their certification dives. If you're a photography buff, you might not want to book a trip on a boat where there will be a lot of hunting taking place. If you're a beginning diver, you don't want to book a trip that's heading to advanced dive sites. And conversely, if you're an experienced diver, booking a trip on a boat where there are a lot of students might not be much fun either.

Each harbor has its own dive boat fleet. Some fleets, like San Pedro's, are large, while fleets in other harbors might consist of only two or three boats. For the most part, boats operating out of the same harbor tend to frequent the same islands, and skippers pretty much know the same dive spots.

So the differences in dive trips often revolve around the boats themselves. Some boats are large and luxurious; others are small and salty. One boat may offer enclosed showers while another features spacious bunks or lots of storage space or a simplified tank filling system. Different features attract different divers, so try out as many boats as possible so you can get a feel of what the fleet offers.

The primary way boats tend to elevate themselves above their competitors is in the level of service they provide. The helpfulness of the deckhands, the quality of the food, and just the general attitude of the crew can make or break the atmo-



Dive masters are always on hand to check divers in and out of the water.



Spend a day on a dive boat and you'll enjoy a lot more than diving.

sphere on a dive boat. Ask around; other boat divers and dive stores can help your decision-making by sharing their past boat diving experiences with you.

When choosing between a couple of different dive trips, don't automatically rule out a boat that charges a higher price without first finding out what the price includes. For example, you may have two boats going to Santa Barbara Island. One boat is charging \$65; the other boat, \$80. At first glance the \$65 boat sounds best, but upon investigation, you might find that it charges for air fills and food, while the \$80 boat includes air fills and food in its charter price.

ARRIVING AT THE BOAT DOCK

Dive boats cruising to the nearshore islands (Los Coronados Islands from San Diego, Catalina Island from San Pedro, Anacapa/Santa Cruz Islands from Ven-

tura/Santa Barbara) usually leave the dock between 6 a.m. and 7 a.m. However, if the boats are heading for the outer islands, they will pull out between midnight and 3 a.m. the night before the dive day so they can be on station at the dive site by the time the sun comes up.

Once you board your boat, the first thing you'll want to do is stow your dive gear. Tanks are usually secured by bungee cords along the aft deck railing; gear bags slide beneath benches or are lined up along the top of the engine room. If stowage areas aren't obvious, just ask whoever happens to be standing around; they'll steer you in the right direction.

Once you've stowed your dive gear, head down to the bunk room and pick out a bunk. Look around; bunks sometimes vary in length, width and amenities. Also keep in mind that the closer you are to the

front of the boat, the more motion you're going to have to contend with. Boats provide a blanket and a pillow for each passenger, but many divers opt to bring along their own sleeping bags for additional comfort.

When you find a bunk to your liking throw a jacket or tote bag on it to show it's occupied, then head on back up to the salon to sign in, show your C-card, and get your diving number. You'll be using this number to check in and out of the water with the dive master while diving, plus you can use it to charge air fills and any food and drinks you might want over the course of the day. Next to the sign-up sheet there should be a roll of masking tape and a felt pen. Write your dive number on a piece of tape, then go out and stick it on your tank.

And that should do it. You're ready to go. Now just relax and enjoy the ride out to the islands.

TIME TO HIT THE WATER

Once the dive boat gets to the first dive site and the anchor drops, the captain or the dive master will gather everybody together on the back deck and describe the diving you can expect at this spot. These pre-dive talks include information on depths, currents and marine life. After the talk is over and all questions are answered, the gates swing open and the diving begins.

The first dive of the day is usually in the deepest water to allow you as much time at depth as possible. Subsequent dives tend to get shallower, enabling you to maximize your bottom time while staying within safe diving limits.

Although the boat ride is always fun, once you hit the water you realize why you came. Sea life is more abundant than back on the mainland, and the colors are sharper. The visibility is better too, and there is dramatic underwater terrain, all combined with the thrill of diving an off-shore island miles from home.

On an average day you can usually get in from three to five dives, depending upon where you are and the depths you're diving at. It's a reluctant diver who climbs out of the water after the final dive of the day, but the sorrow is short-lived, because the fun's not over yet. Stow your gear, take a freshwater shower, climb into some dry clothes and settle in for some serious relaxing. By now the skipper has turned the boat toward home, and the sun is easing toward the western horizon. Beers get cracked open, hunters start cleaning their catch, sometimes a barbecue gets fired up or some clam chowder simmers on the galley stove, as everybody gets comfortable for the ride home.



There's no better place than a dive boat for making new diving friends.



As the boat heads for home, it's time to climb into some dry clothes and settle in for some serious relaxing.

You can climb up onto the sundeck and watch the incredible scenery passing before you. Or you can go join your compatriots in the salon who are swapping sea stories. In many ways the trip home is the best part of a diving day, with good friends sharing good conversation.

As the boat closes on the harbor you'll be called into the salon to settle up your air and galley bill. Then all too soon the boat is tied to the dock, and another terrific day of California boat diving is over. But already you're making plans, with both old and new diving friends, for the next offshore diving adventure. ■



Joni Dahlstrom is *PACIFIC DIVER*'s editor-at-large.

Article and photos by Steve Rosenberg

(except where noted)

The Great Barrier Province, off the northeast coast of Australia, offers many of the world's most spectacular dive sites. This province includes the Great Barrier Reef itself, as well as the Coral Sea. The Great Barrier Reef is not just a single reef, but a series of undersea shoals, reefs and coral cays stretching 1,253 miles from the tip of Cape York in the north to Gladstone in the south. The Coral Sea is the expanse of open ocean east of the Barrier Reef. This entire area is dotted with atolls and pinnacles.

GETTING TO THE "LAND DOWN UNDER"

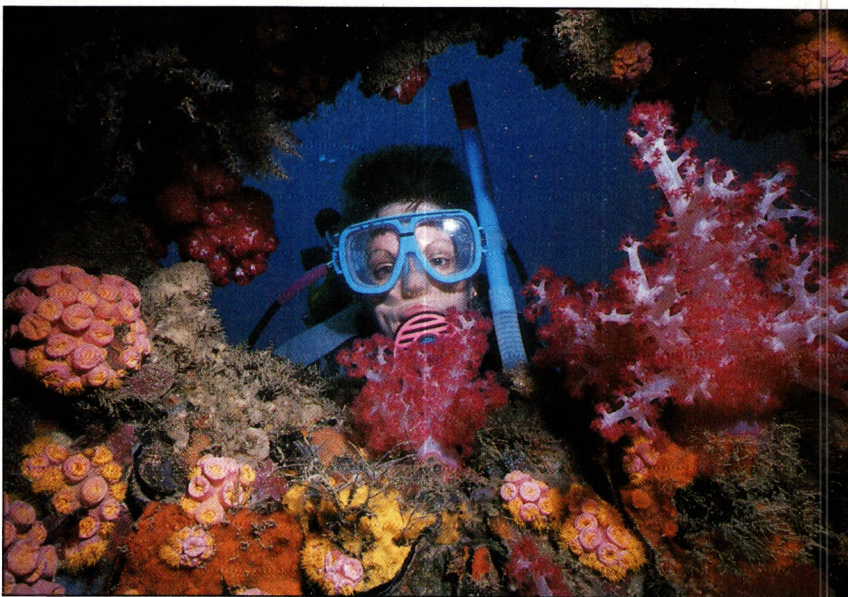
There are many major international air carriers currently serving Australia, bringing diving tourists in from all over the world. Regularly scheduled flights to Australia are offered by Qantas, United, Continental, Air New Zealand, Hawaiian Air and Canadian Air. The easiest gateway to the Great Barrier Reef from North America is by way of the city of Cairns, which is the arrival point of direct flights from Honolulu.

Flights from the west coast of the United States to Australia average 15 hours in the air, with a short refueling layover in Honolulu. Because the flight between Honolulu and Australia crosses the international date line, travelers lose a calendar day traveling to, and gain a calendar day returning from, Australia.

To visit Australia you must have a current passport and Australian visitor's visa, which can be obtained from an office of the Australian consulate. Visas may be obtained by mail from any consulate office by sending them a passport photo, your current passport and a self-addressed return envelope. Of course, you may visit a consulate office in person and obtain the visa within three days. These arrangements must be made prior to departure,

DIVING DOWN UNDER

ERIC COLLINS



AUSTRALIA'S GREAT BARRIER REEF



ERIC COLLINS

White-sand beaches stretch along the coast of Queensland. Left: the famous wreck of the *Yongala* has become an oasis for colorful soft corals.

and ideally should be completed with a couple of months to spare, just in case of problems.

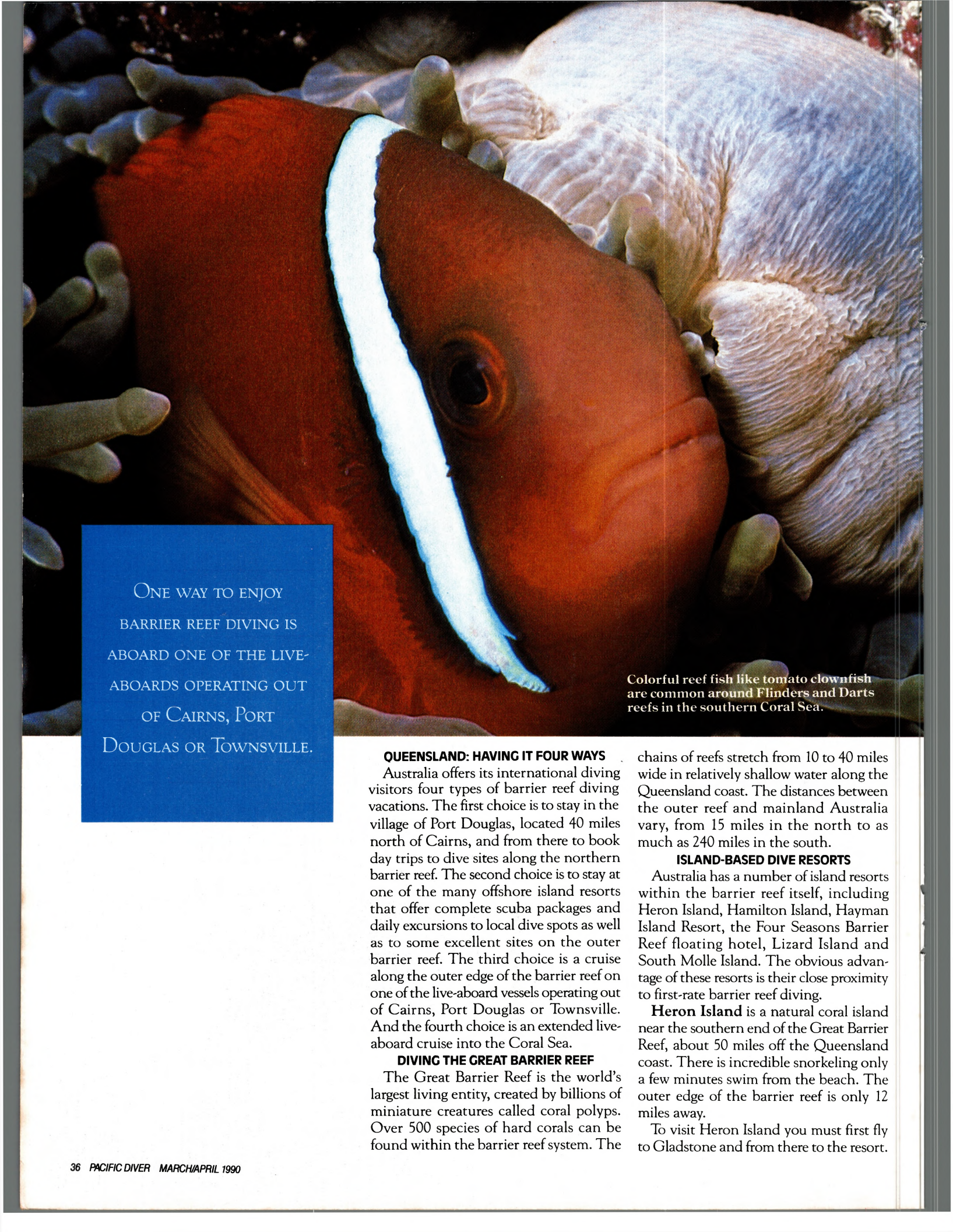
There are very few things that a diver has to be aware of when getting to Australia. The language, except for a few Aussie "improvements," is still English; the currency, despite a sometimes baffling variety of colors and sizes, is dollars and cents; and the people are fun-loving and friendly. The only real differences between Americans and Australians are that Australians insist on driving on the wrong side of the road, and on using a domestic electrical supply that consists of 240-volt and 50-cycle current.

Because of the differences in electrical systems, it's a good idea to bring adapter plugs for Australian electrical outlets as well as two separate voltage converters: a 50-watt transformer for charging strobes,

video lights, dive lights and razors, and a 1,000- to 1,600-watt transformer for running appliances that don't require charging, such as hair dryers. Also, just to be on the safe side, it's a good idea to bring chargers for video and photographic equipment that operate on 220-volt/50-cycle.

Queensland, the Great Barrier Reef State, comprises the northeast corner of Australia. This vacation destination offers much to see in addition to diving. Cairns, which has a population of more than 75,000, is a good departure point for trips heading inland by car or train, or heading north to Port Douglas and to the ancient Daintree rain forest. Townsville, which has a population of more than 110,000, is a palm-fringed city with a balmy climate that offers excellent hotels and restaurants.

Continued



ONE WAY TO ENJOY
BARRIER REEF DIVING IS
ABOARD ONE OF THE LIVE-
ABOARDS OPERATING OUT
OF CAIRNS, PORT
DOUGLAS OR TOWNSVILLE.

Colorful reef fish like tomato clownfish are common around Flinders and Darts reefs in the southern Coral Sea.

QUEENSLAND: HAVING IT FOUR WAYS

Australia offers its international diving visitors four types of barrier reef diving vacations. The first choice is to stay in the village of Port Douglas, located 40 miles north of Cairns, and from there to book day trips to dive sites along the northern barrier reef. The second choice is to stay at one of the many offshore island resorts that offer complete scuba packages and daily excursions to local dive spots as well as to some excellent sites on the outer barrier reef. The third choice is a cruise along the outer edge of the barrier reef on one of the live-aboard vessels operating out of Cairns, Port Douglas or Townsville. And the fourth choice is an extended live-aboard cruise into the Coral Sea.

DIVING THE GREAT BARRIER REEF

The Great Barrier Reef is the world's largest living entity, created by billions of miniature creatures called coral polyps. Over 500 species of hard corals can be found within the barrier reef system. The

chains of reefs stretch from 10 to 40 miles wide in relatively shallow water along the Queensland coast. The distances between the outer reef and mainland Australia vary, from 15 miles in the north to as much as 240 miles in the south.

ISLAND-BASED DIVE RESORTS

Australia has a number of island resorts within the barrier reef itself, including Heron Island, Hamilton Island, Hayman Island Resort, the Four Seasons Barrier Reef floating hotel, Lizard Island and South Molle Island. The obvious advantage of these resorts is their close proximity to first-rate barrier reef diving.

Heron Island is a natural coral island near the southern end of the Great Barrier Reef, about 50 miles off the Queensland coast. There is incredible snorkeling only a few minutes swim from the beach. The outer edge of the barrier reef is only 12 miles away.

To visit Heron Island you must first fly to Gladstone and from there to the resort.

The resort operates dive boats which offer daily half-day trips to nearby reefs and all-day excursions to the Great Barrier Reef itself.

North of Heron Island there are several excellent resorts scattered along the 74 islands that make up the **Whitsunday Group**. For example, **South Molle Island**, a large, hilly, volcanic island, offers a family luxury resort that's a miniature vacation city, complete with stores, restaurants, sports facilities and hundreds of rooms. South Molle Island is an excellent destination for the casual diver whose family members are nondivers.

Hamilton Island, also in the Whitsunday Group, boasts a number of luxury resorts. H2O Sportz, operating a 45-foot day boat, *Whitsunday Diver*, handles all of the diving needs for Hamilton Island guests.

To get to Hamilton Island resorts you fly into Proserpine on the mainland, and from there you can catch a ferry or take a small plane over to the island.

The **Hayman Island Resort** in the Whitsunday Group is a 30-acre fantasy island complete with tropical gardens, waterfalls, swimming pools, a shopping arcade and facilities for hundreds of guests. Hayman also operates a complete dive service, with a 64-foot day boat, the *Reef Goddess*. A special yacht owned by the resort ferries guests from the Hamilton Airport to Hayman Island.

The best known diving area near the Whitsunday Group resorts is **Bait Reef**, located about 18 miles from Hayman Island. This small, oblong atoll, measuring only 1½ miles in length, lies on the outer edge of the Great Barrier Reef. **Stepping Stones** is another unique site, located on the west side of the Bait Reef atoll. It is made up of about 14 flat-topped coral pinnacles that rise from 80 feet to just a few feet below the surface. Other diving sites in the Bait Reef area offer shallow coral gardens, vertical walls, soft corals, anemones, schools of baitfish, large tridacna clams, sea fans and myriad tropical fish. Bait Reef and the surrounding area has been declared a marine park, so the area is fully protected from spearfishing and shell collecting.

A much-talked-about dive resort located 44 miles northeast of Townsville is the **Four Seasons Barrier Reef Hotel**, a 200-room floating hotel that is permanently moored in a beautiful protected lagoon at **John Brewer Reef**. The hotel can be reached via helicopter, small plane or high speed boat from Townsville.

This luxury resort has daily dive trips to sites featuring soft corals, sponges, giant sea fans and clouds of tropical fish,



including large maori wrasse and varieties of sweetlips.

Farther north along the Great Barrier Reef is **Lizard Island**, a small intimate resort that offers spectacular diving. The island, named after its giant four-foot-long iguanas, lies 160 miles north of Cairns and 20 miles off the Queensland coast. The island is surrounded by fringing reefs and submarine coral gardens which provide visitors with excellent snorkeling.

There are daily flights to Lizard Island from Cairns. And the island's hotel is only a 30-minute boat ride from Cod Hole, a popular dive spot. Extended dive cruises are also available from Lizard Island to some of the upper Ribbon Reefs sites, including Dynamite Pass.

REEF DIVING BY LIVE-ABOARD

The Great Barrier Reef is in a constant state of change. Storms wreak havoc on prime dive sites, and coral predators such as the crown of thorns starfish have been known to move in and damage pristine coral reefs. Because of this, it is always a good idea to plan as much variety to your diving as possible. And the best way to do that is by taking a live-aboard diving trip.

Live-aboard dive trips out of Townsville, Port Douglas and Cairns range from three to 10 days and allow divers to experience a variety of dive sites off the beaten path. There are now more than 10 live-aboard dive boats operating out of these three ports.

The dive boats leaving from Townsville make regular trips to the wreck of the *Yongala*, considered by many to be one of the most incredible dive wrecks in the world. The ship is located inside the barrier reef 11 miles offshore and about 50



ERIC COLLINS

Anzac Reef is among the more accessible reefs visited by dive boats cruising the southern Coral Sea.

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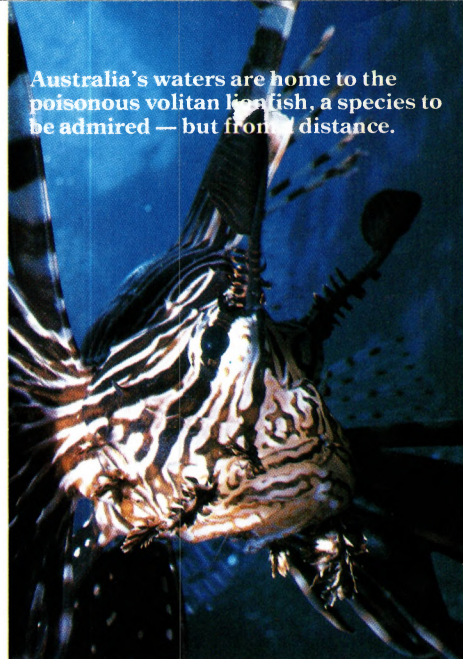
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Australia's waters are home to the poisonous volitan lionfish, a species to be admired — but from a distance.



miles southeast of Townsville. The ship lies on her starboard side on a fairly flat sand bottom in about 95 feet of water. Because the wreck is miles from the nearest reef, she has become an oasis for a diversity of marine life. On this wreck divers commonly see sea snakes, clownfish, soft corals and a variety of pelagics, including large rays, "box car-sized" Queensland groupers, turtles, barracudas and sharks.

Live-aboard boats from Townsville also tour some outstanding areas along the central section of the barrier reef, including **Anzac, Bowl and Coil** reefs, as well as a few of the more accessible reefs in the southern Coral Sea, such as **Flinders** and **Darts**.

One of the things that is immediately obvious when visiting this region is the profusion of vivid colors in the coral formations. And the varieties of reef fish are equally impressive. Gaudy, mobile invertebrates, including intricately patterned nudibranchs, bright red, orange and yellow crinoids, hairy hermit crabs, blue sea stars and other fascinating marine creatures adorn the coral gardens and drop-offs.

Most of the live-aboard dive boats leaving from Cairns and Port Douglas regularly cruise the well-known Ribbon Reefs, Cod Hole and a variety of other sites, including some of the fabulous reefs in the northern Coral Sea. **Ribbon Reefs** covers an 80-mile stretch of the outer barrier reef. Here, divers enjoy dramatic vertical walls, pelagic fish, beautiful corals and large tridacna clams. There are also several beautiful shallow coral gardens where "tame" fish are used to being fed by divers.

Just north of the Ribbon Reefs is the famous **Cod Hole**. Cod Hole is located at Cormorant Pass, on the outer edge of the barrier reef, just north of Ribbon Reefs. Here, 15 to 20 friendly potato cod (a

species of giant grouper) are on hand to entertain divers. These 75- to 200-pound cod have become accustomed to being fed, photographed and fondled by visiting divers.

LIVE-ABOARD DIVING IN THE CORAL SEA

What are generally accepted to be the most exciting reefs in Australia are not those found on the Great Barrier Reef itself, but in the expanse of ocean known as the **Coral Sea**, which sits between the Great Barrier Reef and New Guinea. The best time of year to dive the Coral Sea is from September through the middle of December, when the weather is ordinarily clear and calm and the surface of the ocean is flat.

The Coral Sea is randomly dotted with thousands of submerged atolls and bommies, rising vertically from the bottom of the ocean. ("Bommies" is the Australian name for seamounts and reefs that do not break the surface.) Because of the isolation of these oceanic reefs, many areas still remain untouched by divers.

There are two basic Coral Sea itineraries for divers — the "Southern Route" and the "Northern Route." The southern route leaves from Townsville and takes divers east into the southern Coral Sea. The primary destination is **Marion Reef**, a huge coral atoll some 320 miles off the Australian coast. A coral reef barrier surrounds two-thirds of the seven- by 13-mile atoll, providing flat, calm conditions within a large lagoon. Here, as many as 50 lush pinnacles rise from 180 feet to within 10 feet of the surface. The vertical walls are covered with an incredible variety of hard corals, brightly colored crinoids and giant soft corals. Huge carpet anemones, with their tiny clownfish, adorn the upper reaches of these pinnacles.

However, it is not the interweaving of colors and textures that makes this area so remarkable, but the abundance of large, interesting marine animals. Marion Reef is one of the few places in the South Pacific where divers can count on seeing large numbers of sea snakes. And besides numerous types of sharks, including silver tips, white tips, grays, hammerheads and wobbegongs, there are also large schools of big fish, such as barracudas and jacks. Large stingrays and manta rays are also quite common.

The northern Coral Sea route usually leaves from Cairns and travels east through the barrier reef, visiting many spectacular sites like Holmes Reef, Bougainville Reef, Shark Reef and Osprey Reef.

Bougainville Reef is an atoll which rises to the surface from depths of 6,000

feet. Here divers can expect to see incredible drop-offs with large branches of soft corals and black corals. The remains of a large freighter provide an excellent shallow dive site, where divers can investigate pieces of the wreckage while swimming through clouds of tropical fish.

The "North Horn" at **Osprey Reef** is a favorite dive site among visitors to the northern Coral Sea. It has lots of everything, from huge groupers and schools of sharks to walls with giant soft corals and gorgonians.

Shark Reef is a submerged plateau just to the south of Osprey Reef. This area is not always diveable because there are no

protected anchorages, but it is famous for its large population of sharks, its six-foot barracudas and dog-tooth tuna.

Whether you opt for a mainland resort, an island resort or a live-aboard, diving along Australia's Great Barrier Reef will always be memorable. And the Coral Sea opens such breathtaking diving vistas, that once you've been there you find yourself judging all other destinations on a scale of One to the Coral Sea. ■

Steve Rosenberg is a professional writer and photographer based in Union City, California.

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A Splash of COLOR

Sport Diving's Passion for Fashion



When Henry Ford first unveiled his line of Model A motor cars, he was able to convince Americans that driving an automobile was fashionable as well as functional. Back then, however, "fashionable" was a relative term when it came to cars. In those days, you could choose any color Ford you wanted — as long as it was black.

For years, that was pretty much the trend in the diving industry as well. Go out to a dive site and all you'd see would be black wetsuits, black fins, black masks, black snorkels.

But that was then. This is now.

Today, if you were to take a look at what people wore lounging around a typical dive boat, you'd probably see a lot of

Article by Darren & Stacey Douglass

sweatsuits, slept-in blue jeans and wrinkled windbreakers. However, watch them climb into their diving gear, and chances are you'd be suddenly overwhelmed with wild neon yellows and fluorescent pinks and bright purples, along with every other color in the rainbow, BCs, wetsuits, tanks, gauges and assorted accessories screaming out the individuality of the wearer.

AN AQUATIC FASHION STATEMENT

Well, perhaps not every dive boat or beach looks like a scuba diving fashion show, but it's certainly getting that way. The fashion craze that attacked the skiing, biking, tennis and fitness industries has definitely spread into the diving world.

What began in the early 1980s as a small fashion ripple has grown to tidal wave proportions. Innovative designs and trendy color schemes have become the new mainstay of the diving industry. Chic combinations of neons and fluorescents along with new wave designs have taken the marketplace by storm. Of course, function and dependability in diving equipment will always be important, and certainly "basic black" will always remain in vogue to some degree, but today it's perfectly acceptable, in fact almost expected, to make a fashion statement with your dive gear just like you would with your street clothes.

To help divers do that, in 1990 manufacturers are offering an even wider variety of matching BCs and wetsuits, regulators accented with rings of lime green, pink





and raspberry, and neon tanks with matching mesh protectors. (Companies like Tanks d' Art repaint tanks in a variety of neon and fluorescent colors, and offer custom air brushing with lobster, shark and penguin designs as well.)

Diving computer owners can keep a selection of yellow, pink, blue and red plastic holsters in their gearbags, ready to mix and match simply by exchanging hardware. Not even hoses have escaped



the flood of fashion and color; a variety of colorful plastic hose wraps are now available, as well as actual colored hoses coordinated to match a diver's ensemble. It's a fashion renaissance, and it's allowing today's divers to look good and feel good in their diving equipment.

Vain you say? Perhaps. But you have to remember that people dive to have fun, and there few things Americans enjoy more than looking good.

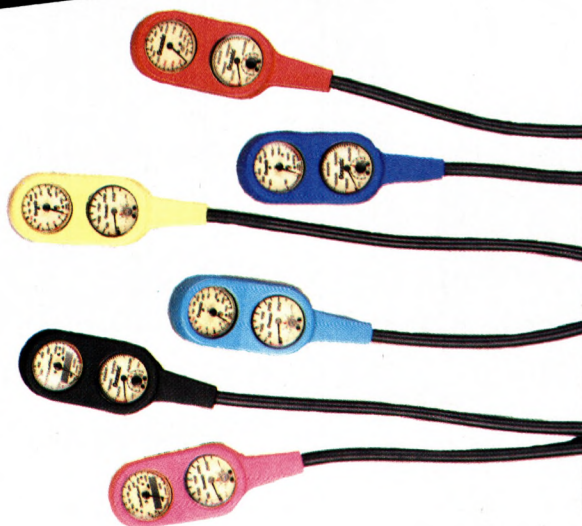
TABATA IGNITES FASHION REVOLUTION

Leading the charge in diving's fashion revolution was Tabata USA, which introduced its Tusa mask, fin and snorkel line back in 1983. Banking on a hunch that American divers would be attracted to more flamboyant colors in dive gear, Tabata began importing diving products boldly emblazoned with the then-radical hues of shocking pink, lavender and green. The response to the new color choices was overwhelming. It was all Tabata could do to meet the demand.

Soon afterward, the company started adding splashes of color to its BCs, regulators and gauge clusters. Then it joined together with Harvey's Skindiving, the Washington State-based wetsuit manufacturer, to develop complementary color schemes. This was the first time brightly colored masks and BCs and colorful wetsuits were specifically designed to create truly color-coordinated diving ensembles.

As a result of this cooperation between diving companies, demand for color coordinated equipment soared. There was no longer any doubt that the diving public wanted equipment that was fashionable as well as functional.

It was a revolutionary shot heard around the diving world, and manufacturers and



importers scrambled to jump on the fashion bandwagon.

However, like all revolutions, this one was not without its fits and starts. As companies rushed to get these colorful new products out on the shelves of dive stores, diving consumers started noticing that if they bought a yellow mask, they wouldn't necessarily be able to find a yellow snorkel that matched. As a result, it wasn't uncommon to see divers roaming beaches and dive boats with six different variations of the same color. If Gloria Vanderbilt had

DIVERS CAN NOW BUY
ONE BC AND THEN
SELECT VARIOUS COLOR
POCKET OPTIONS TO
MATCH NEW GEAR AT A
MINIMUM COST.

been a diver during this revolution's infancy, you probably would have seen her running down the beach covering her eyes and screaming.

Most of the time manufacturers were able to coordinate their colors within their own lines, but for anyone preferring to mix and match their equipment among the various diving manufacturers, as opposed to packaging out with one particular brand, they would have to do some serious shopping through a handful of dive stores to successfully unearth the right shade of "teal" that matched throughout their dive outfits.

Since then, fashion in the diving industry has become much more refined. Many manufacturers are either completely standardizing their color schemes, or at the very least they're using colors that give their diving customers more latitude in matching various pieces of gear.

This more accommodating approach is apparent in 1990's line. Some manufacturers are leaning toward main-bodied color schemes while relying on accent colors to give divers that sense of individuality. For example, several major manufacturers' new lines are featuring main-body colors of black or blue, with stripes and patches of color intermixed into the design.

This is especially apparent in 1990's BCs. Instead of manufacturers building three different styles of BCs in four sizes and six colors apiece, many are now capitalizing on basic black BCs with

removable color pockets. Consequently, divers can purchase a single BC and then select various color pocket options that enable them to match new gear at a minimum cost.

Another inexpensive approach to widening the color options are the multi-colored batons that slide in accent windows on or near BC pockets. Tekna originated this design concept on its 1989 line of BCs, and it will be a feature on other BC brands for 1990. The batons are easily interchangeable, and some manufacturers include a selection of colored batons with a BC purchase.

CHARISMA CHARTER SERVICE

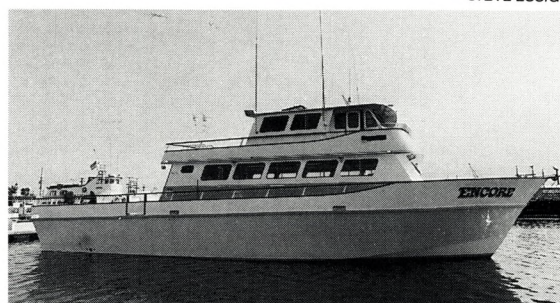
Charisma Charter Service is now running open boats every other Wednesday

Wednesday trips to Catalina are geared to the student diver and those divers that wish to increase their skill levels or just to get away from the daily hussel & bussel of every day life.

RICK BAKER



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Instructors conducting classes with 8 or more students, please call (213) 326-7460 Charisma Charter Service for you or your certified dive masters free spot.

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ENCORE APRIL

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Easter Week

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13, Sun. — Open Boat Santa Barbara
Mother's Day! Mothers & Wives ½ Price
30, Wed. — Open Boat Catalina

CHARISMA MARCH

21, Wed. — Open Boat San Nicolas
Closing of Lobster Season

CHARISMA APRIL

11, Wed. — Open Boat Catalina
Easter Week
12, Thurs. — Open Boat Santa Barbara
Easter Week

25, Wed. — Open Boat Catalina

CHARISMA MAY

16, Wed. — Open Boat Catalina

For Information & Reservations call (213) 832-8304

WAVE OF THE FUTURE

Fashion in the diving industry is now up and running at full speed. Fashion has joined function as a primary design consideration among most of today's equipment manufacturers, with 1990's new equipment line attesting to the continuing emphasis on style and color.

Yes, Tabata's fashion revolution still charges forward, stronger than ever.

Henry Ford would have been impressed.

Darren and Stacey Douglass are PACIFIC DIVER's Feature Editors.

Hawaii Watch

First Dive Boat Operation Opens on Lanai

By John Brumm

Photos by Steve Essig

Central Pacific Divers (CPD) of Lahaina, Maui, one of the oldest diving operations in the Hawaiian Islands, has opened up two new facilities to complement its Lahaina dive store and charter service.

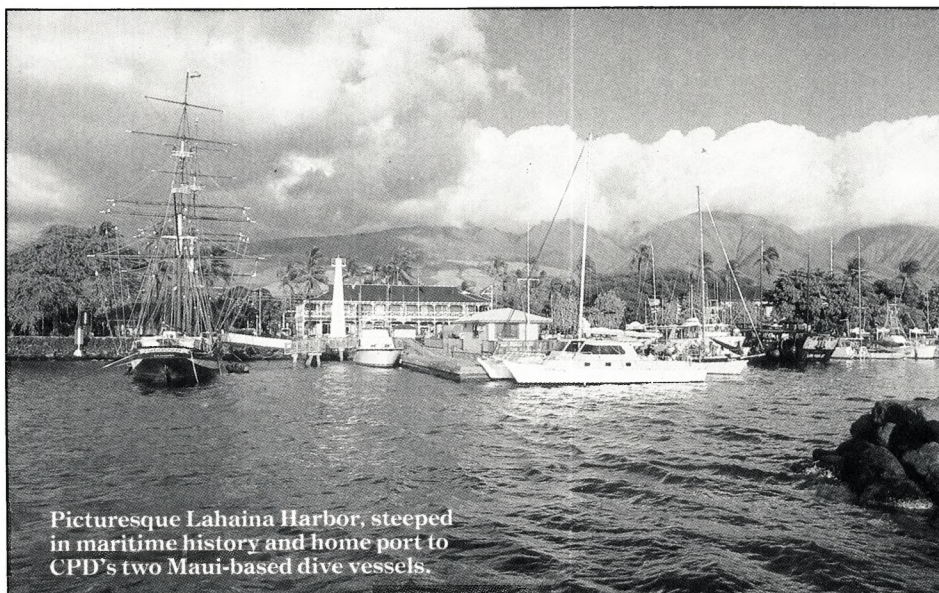
A new store in Kihei, Maui, located at 515 South Kihei Road, overlooks Maalaea Bay, home of Hawaii's humpback whales and some of Maui's most stunning sunsets. In addition to equipment sales and service, this location also provides instruction for all PADI certification levels and introductory dives, plus it offers dive charters over to Molokini Crater.

CPD's first inter-island location now provides dive charters directly off the island of Lanai. With the opening of Rockresorts' Lodge at Koele, Lanai, CPD will be conducting daily pool intros and dive charters for resort guests. From the Koele Lodge's location there are more than 27 different dive sites featuring spectacular lava formations only a short boat trip away.

CPD gets divers out to Lanai's dive sites on its new 25-foot Boston Whaler which comfortably accommodates six divers. Beach dives are also available on a regular basis to take advantage of immediately accessible dive sites.

The Lodge at Koele has 102 rooms and amenities which include a golf course, horseback riding (stables are on the property), croquet fields and a swimming pool.

The second hotel on the beach at Lanai's Manele Bay is scheduled to open



Picturesque Lahaina Harbor, steeped in maritime history and home port to CPD's two Maui-based dive vessels.

December 1990. CPD will be providing dive charters for this resort as well.

But although CPD has expanded its operation to the island of Lanai, it is still operating its bustling store in Lahaina. Located on Front Street (opposite the sea wall), the facility offers introductory dives and refresher dives as well as four- and five-day scuba certification courses along with its regular dive charters for certified divers aboard CPD's two dive vessels, the 43-foot *Zephyrus* and the 50-foot *Alaskan*.

Daily dive charters run out to both Molokini Crater and to many of the famous dive sites along the back side of Lanai. Molokini Crater is a horseshoe-

shaped islet off the Maui coastline known for its marine life. It's not uncommon to see varieties of tropical fish, moray eels and even a white-tip reef shark or two. When the conditions are right, the back side of the crater can turn into an incredible drift dive for more experienced divers. Maui waters average 30 to 80 feet and water temperatures range from 68 to 72 degrees in the winter and 68 to 75 degrees in the summer.

The dive sites along the coast of Maui itself are shallow and easily accessible, making them better-suited to new divers or divers who haven't been in the water for awhile.

Over on the back side of Lanai, CPD's boats take divers to the underwater lava formations that have made Lanai diving famous. These are large underwater caverns offering a myriad of ledges, crevices and archways that form incredible underwater rooms. There are 20 spectacular locations along Lanai's coastline, offering pinnacles, archways and lava tubes.

CPD provides a monthly diving calendar that provides visiting divers with their choice of either beginning, intermediate or advanced diving. For example, six days a week the *Alaskan* departs Lahaina Harbor for a shallow dive (30 feet is the maximum



The 50-foot *Alaskan* cruises to Molokini Crater five days a week for two-tank dives.

depth) along the coast of Maui. This dive is designed to allow noncertified divers to give scuba a try, and also to enable certified divers who haven't been in the water for awhile to hone their diving skills. The dive is \$57, and CPD will deduct \$25 from an inter-island trip following the refresher.

For intermediate divers, five days a week CPD boats depart for Molokini Crater, and to Lanai twice a week, for two-tank

CHOICE ADVANCED
SITES INCLUDE THE
BACK WALL OF
MOLOKINI, THE ISLAND
OF MOLOKAI, AND THE
BACK SIDE OF LANAI.

dive trips. These dive trips cost \$72, and include breakfast, lunch, tanks and weights.

Three days a week boats head out for an all-day three-tank dive along the back side of Lanai. Breakfast, lunch, tanks and weights are included in the \$87 price.

Once a week, the crew takes certified divers on a night dive along the Maui coastline. Eels, pufferfish, lobster and shrimp are just a few of the nocturnal animals divers have a chance of seeing. The night dive is \$57.50 and includes tanks and weights.

Once a week CPD sets aside a two-tank trip for advanced divers only. The destination is usually left open until the last minute due to weather patterns, but the choice advanced sites are the back wall of Molokini Crater, the island of Molokai, the back side of Maui, the island of Kahoolawe, and the back side of Lanai.

To meet CPD's requirements as an "advanced" diver you must have an advanced certification, or 15 logged ocean dives in the past year, and/or you must have been "checked out" by the CPD staff on one of their other dive trips. It may sound like a hassle, but it guarantees experienced divers only will be aboard the boat, which increases the opportunities to dive more out-of-the-way dive spots. These trips cost \$79, and include tanks, weights and lunch.

Finally, experienced divers looking for a different type of night diving adventure can sign on for the "advanced night dive." For a charter price of \$95, the boat departs Lahaina Harbor mid-afternoon for either Molokini Crater or Lanai. A late afternoon dive is followed by a catered gourmet dinner aboard the vessel. After a comfort-

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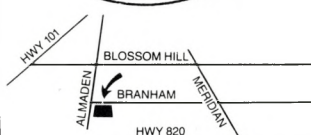
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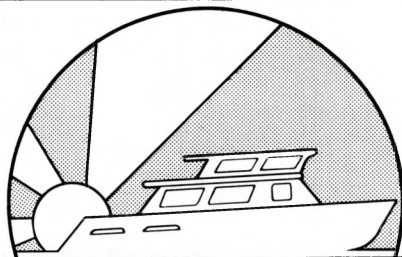


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HOWARD HALL SHOOTS IT OUT WITH A
COUPLE BLOODSTARS. SEE PAGE 51.



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A blast from the past. Cane fields
burning along the Maui coast.

able surface interval you hit the water for a night dive.

CPD works in conjunction with the Plantation Inn in providing hotel/dive packages for divers visiting Maui. The Plantation Inn is situated on Lahainaluna Road in the heart of downtown Lahaina. The architecture and decor of the inn provide visitors with a picture of the ambience that must have existed in Hawaii at the turn of the century.

Inside, each room is unique. Antique furniture, stained glass windows, hardwood floors, brass and poster beds, ornate ceiling fans, floral displays and wall coverings, extensive wood trim, private tiled bathrooms and airy, comfortable verandas add delightful touches to the luxurious surroundings. Central air-conditioning, soundproofing, refrigerators and daily maid service add to the comfort.

The basic dive vacation package includes seven nights lodging at the Plantation Inn, three days of boat diving, breakfasts, a rental car and discounts on dinners at Gerard's restaurant, located inside the inn. Divers who want to get in the water more often can make arrangements with CPD for additional dives.

Since 1971, Central Pacific Divers has been providing Maui divers with a variety of diving amenities, and now with the addition of its second Maui store and its Lanai operation, divers have more to choose from when visiting the islands of Maui or Lanai for a diving vacation. For more information, contact Central Pacific Divers at 780 Front Street, Lahaina, HI 96761; (808) 661-8718 or (800) 551-6767. ■

John Brumm is the editor of PACIFIC DIVER.

DIVE TRAVEL NEWS

Ocean Quest Expands its Dive Programs for 1990

Bret Gilliam, director of diving operations for Ocean Quest Intl., announced recent expansion plans for the company's 457-foot dive ship *Ocean Spirit*. The ship recently moved to St. Petersburg, Florida, and sails every Sunday for Belize, Guanaja, Roatan and Cozumel, offering divers the opportunity to dive four exotic destinations with up to 15 dives during the week-long voyage. Currently the largest sport diving operation in the world, the company conducted over 60,000 dives in 1989 with a perfect safety record.

According to Gilliam, Ocean Quest plans to add four new dive boats to the ship's current boat fleet, bringing the number of 32-foot runabouts to 12 and increasing the weekly diver load to 200, while still allowing personalized dive boat groupings of 16 divers or less.

The ship's dive training programs are also being expanded. Resort courses to advanced training are receiving extra staffing and many new specialty certification programs are now being offered.

Continued interest in Ocean Quest's pioneering specialty certifications in diving computers and accident management-recompression chambers has prompted the enlargement of these classes to handle the demand. The chamber course includes workshops in field management, oxygen administration, symptomatology and recognition of decompression sickness in addition to treatment modules and actual chamber "dives." Both are NAUI, PADI specialties developed by Gilliam and his staff. Over 7,000 divers have participated in the training programs so far.

Special seminars such as the Diving Medicine CME credit courses for DAN and the Undersea and Hyperbaric Medical Society (UHMS) will be repeated in 1990 with speakers such as Dr. Bobby Lewis and Dick Rutowski.

Divers can have the additional comfort

Instructor Matt McDermott (right) explains recompression chamber procedures. Below: dive boats prepare to take on passengers.



STEVE ESSIG



BRET GILLIAM

of knowing that an eight-person recompression chamber is on board fully staffed by trained operators. Gilliam noted that the *Ocean Spirit's* chamber is an authorized treatment facility for both DAN and DCN insurance.

Finally, in 1990 special emphasis will be placed on underwater photography and videos. Ocean Quest has entered into an agreement with Ocean Photo Ltd. to operate both the new Ocean Photo Center and the Ocean School of Underwater Photography. The photo center will offer sales and rentals of Nikons and Sea & Sea 35mm cameras, lenses, strobes and Sony video camcorders. It will also offer E-6 slide and C-41 print film processing as well as service and repairs.

The photography school will offer

specialty courses for basic through advanced photography and videography. A seminar program will feature professional underwater photographers as guest instructors and speakers.

The photography program will be managed by Steven Bowden, an internationally recognized photo journalist whose work has appeared on the *Scuba World* television series, *Sea Fans* video magazine, the *Travelview* International dive series and in *Diver's Almanac*. Gilliam, a prominent underwater photographer in his own right, will assist Bowden with the photography program.

For more information about Ocean Quest's new programs, contact Ocean Quest Intl., 512 S. Peters St., New Orleans, LA 70130; (800) 338-3483.

Bonaire's Sonesta Beach Resort Offers Reduced Dive Packages

From April 15 to December 20, 1990, the new Sonesta Beach Resort in Bonaire is offering seven day/six night dive packages for \$695. The price, based on double occupancy, includes round trip airport transfers, six full breakfasts, unlimited boat day dives, unlimited shore diving, one boat night dive and a welcome reception party.

The resort offers a full service scuba diving shop with underwater photographic



The 150-room resort overlooks its own private beach and marina.

equipment, a private beach, swimming pool and a wide array of watersports, including sailing, windsurfing, snorkeling and fishing. All 150 guest rooms and suites feature a balcony or patio, and most rooms have water views.

For more information or reservations, call Sonesta International Reservations at (800) SONESTA.

Continued

DIVE TRAVEL NEWS

M/V Coriolis Offers Exclusive Dive Cruises into the Waters of Vanuatu

Vanuatu has long been known as the land of crystal clear waters, white sand beaches, ancient cultures and pristine diving. Now the M/V *Coriolis* is offering live-aboard diving among the archipelago's 82 idyllic islands.

Formerly known as the New Hebrides, Vanuatu lies 3½ hours flying time north-east of Australia. The M/V *Coriolis* is the only live-aboard dive boat that cruises these islands. The spacious 140-foot vessel is fully air-conditioned and carries only 16 passengers and a crew of 12. Every meal includes wine and the main deck bar serves cocktails and ice cold beer throughout the day.

The *Coriolis* has been fitted with a large dive center equipped with two compressors, 50 tanks, individual storage bins for personal gear, and space for hanging wetsuits. There is a dive platform on the side of the ship; however, most diving is done from the two 20-foot Zodiacs.

The 140-foot M/V *Coriolis* is the only dive live-aboard cruising the waters of Vanuatu.



Vanuatu features a variety of walls and pinnacles covered in both hard and soft corals, giant sea fans and hundreds of colorful fish species. Divers commonly encounter mantas, eagle rays, giant wrasse, schools of barracuda and lots of sharks, tuna, morays, turtles and giant clams.

Also in Vanuatu waters are the remains of World War II vessels, including the USS *President Coolidge*, the world's largest intact diveable wreck. At 654 feet long, she

lies just off the beach in Santo Harbor. And just five minutes from the *Coolidge* is the famous Million Dollar Point, which is scattered with a variety of military equipment, from boots and helmets to tanks and jeeps in waters from 20 to 120 feet deep.

For more information on the M/V *Coriolis*, contact See & Sea Travel at (800) DIV-XPRT national, or (800) 462-9739 Calif.

Fantasea II Begins Dive Operations in the Red Sea

The 115-foot M/Y *Fantasea II* is now operating live-aboard dive charters in the Red Sea. The vessel departs from Eilat, Israel, or Sharem el Sheik, Egypt, and travels to Ras Mohamed, the *Dunraven* shipwreck and the virgin reefs of the southern Red Sea.

The cruise includes a minimum of three dives a day, a guide, tanks, refills and weights. On board there are two compressors, 20 full sets of dive equipment and underwater scooters. The vessel books groups of 16, and provides an eight-man crew.

For more information and reservations contact Howard Rosenstein, Fantasea Cruises, P.O. Box 234, Hofit, Israel 40295; (053) 666482, 663555.

Well-Known U/W Photographers Featured Aboard Aggressors

Chris Newbert, Stan Waterman, Scott Frier and Jim Church will be featured aboard the various vessels of the Aggressor fleet throughout 1990.

Chris Newbert, author of *Within a Rainbow Sea*, will be aboard the *Kona Aggressor* May 5-12, where he will teach and assist 12 diving guests in taking prize-winning underwater photographs.

Three-time Emmy award winner Stan Waterman, regarded by many as the "dean

of underwater photographers," is internationally known for his work on such films as *Blue Water, White Death* and *The Deep*. He will be working on a diving film while with the Aggressor fleet, and will welcome the participation of guest divers. Waterman will be aboard the *Kona Aggressor* April 1-14, the *Bay Islands Aggressor* May 19-26, and the *Cayman Aggressor II* November 3-10.

Former chief expedition photographer for the Cousteau Society, Scott Frier is presently an underwater photographic specialist for Nikon. He will be representing Nikon aboard the *Kona Aggressor* April 28-May 5, and October 20-27, and will be aboard the *Okeanos Aggressor* November 1-11.

Underwater photographer, teacher and author Jim Church will be offering an underwater photography course that will stress multi-level instruction for both beginning and advanced photographers which will include slide shows, lectures and demonstrations. Church will be aboard the *Bay Islands Aggressor* April 21-28, the *Antilles Aggressor* May 26-June 2, the *Kona Aggressor* August 4-11 and 11-18, the *Cayman Aggressor III* August 25-September 1, October 13-20 and 20-27, and the *Belize Aggressor* November 10-17.

For more information on any of these photographic cruises, contact Aggressor Fleet Ltd., P.O. Drawer K, Morgan City, LA 70381, or call (800) 348-2628.

Frink and Sefton Escort Indonesia Dive Expeditions

Tropical Adventures is offering a series of underwater photo workshop/cruises to Indonesia. Itineraries have been developed to include unlimited diving at world-class sites, throughout eastern Indonesia, which are known for their outstanding visibility and diverse marine life. Award-winning underwater photographers and marine journalists Stephen Frink and Nancy Sefton will be featured as group escorts, offering informal daily workshops on underwater photography techniques and Indo-Pacific marine life.

The trip will be conducted aboard the 100-foot luxury live-aboard, M/V *Tropical Princess*. The dive vessel features 10 staterooms, each with a private bath and individually controlled air conditioning.

These Indonesia dive expeditions start at \$2,375, and include air fare out of Los Angeles. For more information, contact Lynn Goddess at Tropical Adventures Travel, 111 Second Ave., Seattle, WA 98109, or call (800) 247-3483 national, (206) 441-3483 in Washington State.

Ramada Treasure Island offers Special Dive Packages

The Ramada Treasure Island Resort in the Cayman Islands is now offering its "Diving our Crystal Clear Caribbean" diving program, which includes accom-

DIVE TRAVEL NEWS

modations, the use of tanks, backpacks and weightbelts, and access to all resort facilities.

A four-day/three night program includes two two-tank dives, and is priced at \$342, based on double occupancy. A three-night "Resort Course" package includes a full day resort course and a Stingray City dive for \$386.

Those staying six days/five nights can enjoy three two-tank morning dives, plus one Stingray City or night dive, all for \$597, and the resort's eight day/seven night package, for \$853, includes five two-tank morning dives, plus one Stingray City dive or a night dive.

Packages may also be booked at reduced rates for nondiving companions. All prices are valid through April 15, 1990. For more information, contact Ramada International at (800) 228-9898.

Packages to SVG Now Available Exclusively From Landfall

Landfall Productions has been appointed exclusive western U.S. representative and booking agent for St. Vincent and the Grenadines (SVG). Located in the eastern Caribbean 100 miles east of Bar-



A variety of dive services are available at Jamaica resorts. ►

bados, St. Vincent offers cascading waterfalls, a 4,000-foot volcano, black sand beaches and a rugged coastline. The Grenadines are comprised of 32 cays and islands stretching south from St. Vincent.

Both St. Vincent and the Grenadines offer incredible wall diving, caves and extensive reef systems thick with black coral and deep-water gorgonians. Many of these sites are virtually untouched and accessible within a 10-minute boat ride.

For information on special dive packages to St. Vincent and the Grenadines, contact Landfall Productions at (800) 525-3833 national, or (415) 651-6499 in California.

Jamaican Dive Packages Available From Fantasea Divers

Fantasea Divers, a PADI training facility in Ocho Rios, Jamaica, offers seven day/six night dive packages starting at \$460 per person, double occupancy.

The company offers a variety of accommodations, from elegant resorts to apartments and full service condos. Three dive boats carry divers to reefs located only minutes from the beaches. Visibility reaches 175 feet, and underwater terrain includes soft coral reefs, caverns and trenches, all inhabited by countless tropical fish.

As a training facility, Fantasea offers resort, referral, certification, night diver and deep diver courses, as well as search and recovery, navigation, medic first aid and research and equipment courses.

With four dive shop locations, dive package accommodations are available at Boscobel Beach, Golden Seas, Mallards Beach, Morgan's Harbor, San Souci Hotel & Spa, Sea Palms, Silver Seas and Sunshine Jamaica Villas.

For more information and reservations, call (800) 522-DIVE.



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IN-SEASON

Ocean species in season for the months of March and April.

California

Lobster — Minimum size, 3¼", measured in a straight line on the mid-line of the back from the rear edge of the eye socket to the rear edge of the body shell. Limit, 7. Lobster season closes March 21.

Pismo Clams — Minimum size, 5" in greatest shell diameter north of the boundary between San Luis Obispo and Monterey counties; 4½" south of the boundary. Limit, 10. Open everywhere except in clam preserves and marine life refuges.

Abalone — Minimum size, reds 7"; greens, pinks and whites 6"; blacks 5"; all other species 4". Limit, 4 in any combination of species. South of Yankee point season reopens March 21. North of Yankee Point season opens April 1. Between Palos Verdes Point and Dana Point abalone may not be taken at any time of the year. **Note:** Keep alert as to changing limits and seasons. Rumor has it that game law revisions might be announced at any time.

Striped Bass — Minimum size, 18" total length north of Pt. Conception; no minimum south of Pt. Conception.

California Halibut — Minimum size, 22". Limit, 5.

Pacific Halibut — Season: March

1-October 31. Minimum size, 32" total length. Limit, 1.

Lingcod — Minimum size, 22" total length. Limit, 5.

Kelp Bass, Barred Sand Bass, Spotted Sand Bass — Minimum size, 12" total length. Limit, 10 in any combination of species.

White Sea Bass — Minimum size, 28" total length. Limit, 3.

Oregon

Halibut — Limit, 2. Seasons and minimum lengths are set annually through the Pacific Halibut Commission.

Lingcod — Limit, 3.

Greenling, Cabezon & Rockfish — Limit, 15 fish in aggregate.

Flounder, Surfperch, Sole & Others — Limit, 25 fish in aggregate.

Abalone — Minimum size, 8". Limit, 3.

Red Rock Crab — Any size or sex. Limit, 24.

Rock Scallops — Limit, 24.

(Whale Cove in Lincoln County is closed to the taking of all fish and shellfish.)

Washington

Abalone — Minimum size, 3½". Limit, 5 per day.

Octopus — Limit, 2, no irritants or tools allowed in the capture.

Scallops:

Pink — Limit, 20 lbs. or 10 quarts in shell.

Rock — Limit, 12 daily.

Weather-vane — Limit, 12 daily, minimum 4" in diameter.

Dungeness Crab — Minimum size, 6¼". Limit, 6 males.

Red Rock Crab — No sex/size restrictions. Limit, 12 per day.

Lingcod/Bottomfish:

Coastal (salmon areas 1-3) — Lingcod: Limit, 3. Open all year. Rockfish: Limit, 15. Open all year. All other bottomfish: No limit. Open all year.

Neah Bay (salmon area 4) — Lingcod: Limit, 3, east, west and south of Tatoosh Island.

Rockfish: Limit, 15. Open all year. All other bottomfish: No limit. Open all year.

Strait of Juan de Fuca/San Juan Islands (salmon areas 5-7) — Lingcod: Limit, 1. Bottomfish: Limit, 15. (Lingcod count as part of limit, no more than 10 may be rockfish.) Open all year.

Inner Puget Sound (salmon punch card areas 8-13) — Bottomfish: Limit, 15 (with 5 maximum rockfish). Open all year.

BLOOD STAR SHOOTOUT

I don't know what they were doing standing there together on their tiptoes, but I knew it was a special sight.

Larry dabbed a bit of silicone lubricant on his index finger and shined the large O-ring of his Hydo-35 camera housing. Satisfied with the coverage, he delicately dropped the ancient Nikon F camera into the housing and flipped over the latches two at a time.

I watched Larry with some amusement, but I could certainly understand his diligence. The week before, his inattention to detail when assembling his equipment had resulted in a housing that weighed six pounds more when he got back to the boat than it did when he started his dive — the six pounds being the approximate additional weight of the seawater that completely filled the housing.

I looked past where Larry sat on the engine cover of his 24-foot Seabird and

and followed Larry down. Visibility was a bit better than I had suspected, reaching 20 feet as we passed through the thermocline. Larry stopped on the bottom to set his compass bezel, then moved off toward

the canyon wall. We swam down a steep muddy slope until we reached the canyon rim at 100 feet.

I immediately found a pure white sea cucumber and positioned my strobes to



IT'S AN ADRENALIN RUSH
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watched the waves breaking on the rocks north of La Jolla Cove. The water surrounding the boat was placid, but the smell of kelp was strong in the air and I could tell from the crash of waves on the rocks that there would be surge on the bottom. But that didn't matter much to me, because Larry and I were planning to drop over the southwest edge of the La Jolla submarine canyon, and it would be calm below the rim in more than 100 feet of water. Water visibility might stink, but it was a great adrenalin rush to hang on the edge of this abysmal canyon in near darkness and imagine what strange creatures might be swimming around just below us.

After turning on my two small Oceanic strobes, I slipped over the side of the boat



Starfish on their tiptoes, dancing to an extremely slow tune from a turntable in their own private time zone.



While perhaps interesting to look at, shots of pure white sea cucumbers are not what you would call red hot sellers.

light it from either side. Focusing my 55mm Micro Nikor lens on the cucumber, positioned about 18 inches away, I shot three photographs at f8 which I felt was the right exposure for Kodachrome 64 film. Then I shot one photo at f5.6 and one at f11 for safety. I thought about moving in for a close-up, but decided that this species of cucumber is disgusting enough at 18 inches and a close-up would be unnecessary. Add to that the fact that sea cucumber photos are not red hot sellers, and I decided shooting more than a half dozen frames was uncalled for.

I looked down the wall and saw Larry flashing on a vermilion rockfish that was resting next to a gorgonian at 140 feet. I dropped down to watch just as he finished up and was pleased by the mild buzz produced by nitrogen narcosis. Larry knew that I was collecting photos of rockfish species and so when he looked up and saw me there he assumed I was waiting for a chance to photograph the rockfish too. So Larry waved his hand which frightened the fish down into the darkness below. Larry was engulfed in a cloud of silt and he looked at me with a maniacal grin that caused water to leak into his mask. It was a joke that we sometimes played on each other. Making a bit of competition out of our photography made it more fun, so if one of us thought we had a good shot, we made sure the other didn't get a chance at it. Of course, had the subject really been something special, our attitude would have been much more serious, and we would have shared the opportunity.

The rockfish gone, I moved off and looked for another subject, but I didn't find anything that interested me. It's not easy to shoot 36 exposures on one dive below 100 feet. It means shooting more than one photo per minute. But on the other hand, shooting an entire roll of film on a dive has never been a priority for me. I would rather spend my time underwater searching for unusual subjects than spend it shooting an entire roll of average photographs. A single roll of film could probably last two or even three dives in the La Jolla submarine canyon.

Getting low on air, I ascended the wall and moved back up the muddy slope, then took a compass bearing and swam across the sandy plain toward the boulder field where the boat was anchored.

I didn't stumble onto the pair of starfish. I saw them 10 feet away. They stood out like an orange neon beer sign on a darkened waterfront. When I got close enough for a good look, my knees started to shake. They were two blood stars, and they were standing on their tiptoes in the shelter of a gorgonian coral on the top of a large

THE STARFISH
STOOD OUT LIKE AN
ORANGE NEON BEER
SIGN ON A DARKENED
WATERFRONT. THEY
WERE BEAUTIFUL. I
KNEW THIS WAS
SPECIAL.

rock. They stood close together in perfect symmetry. They were beautiful. I knew this was special.

I quickly checked my pressure gauge and decompression meter and discovered that I had only a few minutes bottom time left but adequate air for decompression if necessary. I positioned one strobe to light the starfish from above and the other strobe to light them from the side. I checked the frame counter to make sure I

had plenty of film left in the camera. I focused the 55mm lens through the flat port on the starfish about one foot away. Then I moved back and turned the camera toward my face and held it the same distance away and checked the position of the strobes. Satisfied that I would be lighting the starfish as I planned, I started shooting.

Since the starfish were standing on top of a rock, I was able to get my body down over the side of the rock and position the camera at ground level with the starfish. This produced a marvelous perspective. I shot three frames at f11 which I suspected would produce my best exposure. With most strobes, f16 would be the correct aperture setting at a distance of one foot, but my Oceanic strobes were pathetically underpowered. And since I always shoot what I think will be my best exposure first, in case I don't have time to bracket, I shot at f11 first, then switched exposure to f16 and shot three frames. Next I reset to f8 and shot two more photos. I felt certain that f8 was wrong, but I wanted to be certain. I then switched back to f11 and shot three more frames using different composition. To finish up, I shot another three frames at f16.

I moved back from the starfish and wondered if there was anything else I could do to make the photo better. I still had 10 frames left in the camera. But checking my decompression meter, I saw I had run out of time. As I ascended the anchor chain I knew I had captured something special.

I never figured out what the starfish were doing on their tiptoes down on that rock. Some authorities speculate that they were filter feeding, others suggest that they were spawning. I prefer the latter explanation. There was something exceptionally anthropomorphic about the image. The starfish seemed to be dancing to some extremely slow tune only audible to creatures living in their time frame.

In the decade or so since I took the photograph, I've published it more than a dozen times. Twice, in different parts of the world, I've seen individual starfish standing on their tiptoes like this. But I have never seen a pair together. And I've never seen blood stars doing it since, although I've been watching for it during many hundreds of hours diving in California waters. ■

Howard Hall is a documentary film producer and cinematographer who has won two Emmys for his underwater camera work. The author of the book "Successful Underwater Photography," Hall is currently producing a film about California marine life for the PBS series Nature.

MAKING FRIENDS AT THE TACOMA NARROWS BRIDGE

By Tom Taaffe, Seattle, Washington

I should have felt guilty about calling in sick at work, but diving conditions were just too good to pass up. Warm, sunny weather and unusually slack currents provided my buddy Ron and I with a rare opportunity to dive the wreckage of the Tacoma Narrows bridge.

The massive bridge collapsed during a violent storm some 40 years ago. What was once one of the longest expansion bridges in the world was now covered in a thick carpet of anemones and other filter feeders, a home for a diverse population of marine life.

Today shrimp and crabs were everywhere; a wolf eel poked its head out of a hole, while in another we could see octopus tentacles big enough to qualify for a Jules Verne story. I looked at Ron and could only shake my head. I had never seen anything so beautiful.

Suddenly everything went berserk. Above my head fish darted wildly about. I could feel the tension in the water, and knew a large predator was nearby. A killer whale perhaps? Or maybe a Great White!

I looked at Ron. His eyes were as wide as my mouth was dry. Suddenly I wished I was back at work. Then I took a breath, remembering that there were no white sharks in Puget Sound. The only thing threatening me was my imagination.

Just then an enormous sea lion swam lazily overhead. I laughed behind my mouthpiece. A common sea lion had caused all this fuss. The big guy stopped a few feet away and looked us over. I reached out and tried to coax the animal a little closer, but it turned and swam away. The encounter was over as quickly as it began. I was about to turn back to the bridge, when suddenly I saw a cloud of fish heading straight for me with the sea lion in hot pursuit. Unbelievable as it was, the sea lion appeared to be actually herding the fish toward us.

The sea lion cut for the surface 60 feet above for a breath of fresh air, then quickly returned. I held out my hand again, hoping it would continue to play. But when it saw my hand it swam right up to me and wrapped its mouth around my glove, biting down gently, then it let go and did something I will never forget.

As I stood there the animal moved up alongside of me and rested its head on my chest, staring up at me with its big brown

eyes like a family dog, proudly displaying its impressive set of yellow-stained teeth.

I just stood there, not sure what the sea lion's motives were. Then it blew a stream of bubbles in my face and bolted to the surface.

I swam part way up to meet the friendly animal on its way back down, and we began to play together, doing barrel rolls, spinning, twisting. The sea lion was so graceful, I was so awkward. Sometimes it would let me reach out and hang on as it performed its somersaults. It was pure magic.

Unfortunately, we were both bound to the world above. The sea lion had to leave from time to time to catch its breath, and finally my air gauge read 500 psi. It was time to leave.

I swam down to Ron and motioned that I was low on air. We followed the bottom contour up to the surface. All the while the sea lion swam alongside us, still rolling and weaving, wanting to play.

Once out of the water, we made our way along some railroad tracks to where we had parked the car. I looked out on the water one last time and saw the sea lion, swimming along the surface. I yelled, trying to attract its attention. The sea lion picked its head up and looked my way. When it spotted me, it lifted its body halfway out of the water and began shaking its head up and down like a Sea World porpoise. It was then that I knew that big sea lion felt the same way about our encounter as I did. I was as moved as I was sad as I walked to the car.

Scientists tell us that we are not supposed to give human emotions to animals, and normally I would agree with them. Yet on that day I know a barrier had been crossed. That sea lion and I had reached out and communicated in a way that will remain with me for the rest of my life. It gave me a sense of what it is to be alive, and that, after all, is why I dive. ■

Do you have something in your logbook that you'd like to share with other divers? If so, send it to LOGBOOK, c/o Pacific Diver, P.O. Box 6218, Huntington Beach, CA 92615. A self-addressed stamped envelope must be included to ensure the return of any photographs. A \$25 award will be given for any stories selected for publication.

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Gorilla Diving at Boundary Pass Buoy

Article and photos by F. Stuart Westmorland

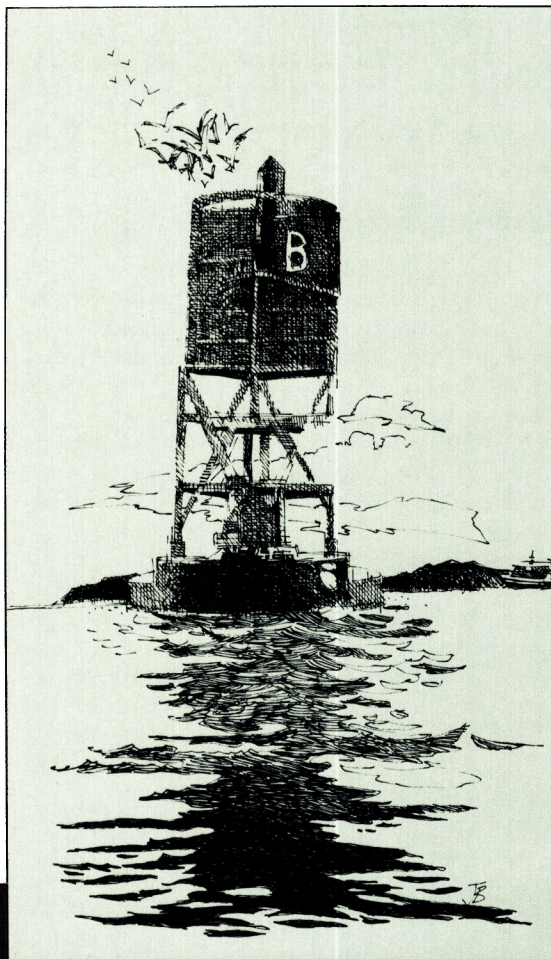


ILLUSTRATION BY JOEL BARBEE



**It's an antisocial wolf eel that will refuse a piece of urchin, scallop
or crab offered by a friendly diver.**

In the cold waters of Washington's Inland Sea, the border between the United States and Canada zigzags between the Canadian Gulf Islands and the American San Juan Islands.

This border follows an imaginary line through the center of the Strait of Juan de Fuca, Haro Strait, Boundary Pass and the Strait of Georgia. The entire area, including both the Gulf and San Juan island groups, has been attracting boaters, fishermen, sightseers and divers for years.

However, there's a special spot in the middle of Boundary Pass where a lone black bell buoy rolls and clangs in the tumultuous current. Most people think this buoy simply marks an international border. But a few adventurous divers from both sides of the border know that this buoy also marks the location of a true "international" dive site, a colorful undersea ridge nearly a quarter mile in diameter that rises up from depths of more than 100 fathoms and plateaus about 60 feet below the surface.

Boundary Buoy is a one-hour boat ride from either Canada's Vancouver Island or mainland Washington. Because it doesn't suffer from the effects of river runoff and other shoreside disabilities, visibility at Boundary Buoy tends to be 10 to 30 feet greater than you'll find anywhere else in the region. In fact, during autumn months when the plankton levels drop throughout the Pacific Northwest, it's not uncommon to find visibility in excess of 70 feet below the buoy.

With such good visibility your chances are much better of spotting a couple of Washington's most popular underwater residents: the wolf eel, and the Pacific Northwest's much-maligned monster, the Giant Pacific Octopus.

Wolf eels are denizens of the reefs, so the best way to find one is to search for the remains of crabs and urchins among the rocks. Find a pile of crab or urchin pieces scattered around a hole in the reef, and chances are good that you've just come across a wolf eel's "den."

Although wolf eels are formidable-looking creatures, many of them like to be fed, much like you'd feed a household pet. It's the rare, antisocial wolf eel that will refuse to partake in a piece of urchin, scallop or crab offered by a friendly diver.

No Pacific Northwest aquatic adventure is complete without an encounter with a Giant Pacific Octopus. These shy, gentle animals display their emotions like a neon sign. When angry or trying to escape they turn bright red. After jetting out of reach and shooting you with a cloud of ink, they'll settle onto the bottom and take on the coloration of their surroundings.



The fiery, red-orange coloration of a juvenile Puget Sound king crab looks too hot to touch, even in this 42-degree water.

Completely unpredictable, some Giant Pacific Octopuses enjoy food offerings from divers; others flee in terror. For those animals that seem to want to hang around, remember that octopus skin is very sensitive. If you really want to make friends, remove your gloves before trying to touch them. Of course, considering that these octopuses live in 42-degree water, you might want to reconsider just how friendly you want to get.

Giant Pacific Octopuses are nocturnal animals. During the day they usually stay holed up in deep crevices within the reef. However, as you dive deeper, darkness usually overcomes daylight beyond 50 feet, especially in the wintertime, so don't be surprised if you see them out and about.

In addition to wolf eels and octopuses, the plateau below the Boundary Pass Buoy is home to schools of rockfish and brooding sea anemones. These exquisite anemones form a carpet-like growth on much of the rock surface. Their colors range from a glowing red to shades of hot pink. Aim a powerful dive light across these blankets of life, and the anemones shimmer like jewels.

There are countless other inhabitants of the ridge, but you have to really look close to pick out the smaller creatures. The Red Irish Lord, for example, is a master of

Tiger rockfish are among the residents of the ridge beneath the Boundary Pass buoy.



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Boundary Pass Buoy Dive Facts

HOW TO GET THERE: Private boat launches are available at downtown Bellingham, Post Point and the nearby Larrabee State Park, as well as San Juan Island and Rosario Point and West Beach on Orcas Island. Launching from any of these sites will get you to Boundary Pass Buoy in less than an hour.

Anacortes, a 60-minute drive from Seattle, is a marine-oriented town with several boat launches. It is also the home of several of the region's best charter dive boats. The state ferry service to the major San Juan Islands is also based here.

This is truly a dive for the advanced diver. Currents can be savage, and local knowledge is crucial for a safe dive, so it is highly recommended that divers venture out to Boundary Pass Buoy only aboard one of the professional charter dive boats available in the area.

GENERAL CONDITIONS: Visibility is best in the late fall and winter. Beware of the strong currents year-round. Consult a 1990 current and tide table for Puget Sound and surrounding areas, printed by Island Canoe, (206) 842-5997. Apply the time correction for Boundary Pass, and allow time to wait for slack current. Dive ONLY during slack current. Water temperatures vary only slightly, from 42 to 48 degrees year-round.

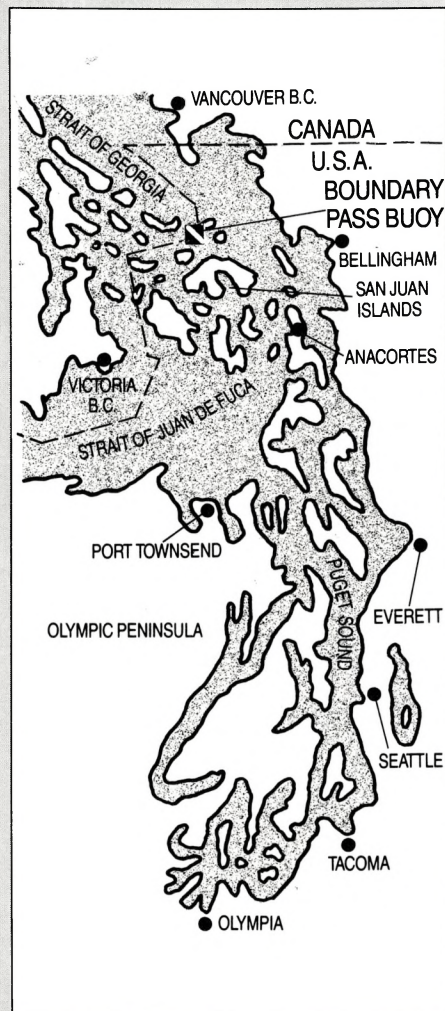
DIVE CHARTER BOATS: *Starfire*, moored at Cap Sante Marina, (206) 364-9858; *Sea Wolf*, moored at Cap Sante Boat Haven, (206) 293-4248.

LOCAL DIVE SHOPS: Anacortes Diving and Supply, 2828 Commercial Ave., (206) 293-2070; Bellingham Dive

camouflage. Seldom exceeding a foot in length, this colorful predator blends easily with its surroundings. But if you can find one, it will behave like a veteran photographer's model by staying perfectly still, even for the clumsiest camera holder.

Tiny longfin and ruby-red scalehead sculpins can also be found on the plateau, along with ringed-top snails and the juvenile Puget Sound king crab, whose fiery, red-orange coloration looks hot to the touch.

One of the oldest year-round charter operators in the region, Gordon Bradley, considers the Boundary Pass Buoy one of the Pacific Northwest's classic "gorilla dives." Owner of the 54-foot *Starfire*,



& Travel, 2720 Maplewood, (206) 734-1770; Washington Divers (Bellingham), 903 State St., (206) 676-8029. **GENERAL INFORMATION:** Anacortes Chamber of Commerce, (206) 293-3832; Washington State Ferry System, (206) 464-4600; Washington State Parks & Recreation, (206) 753-5755; Washington State Fisheries, (206) 753-6600.

Bradley visits Boundary Buoy only on special request, and considers it a dive spot for "advanced divers only" because of the radical currents. But when the water finally slows down enough to dive into this underwater wonderland, the beauty of the Boundary Buoy plateau overwhelms all memories of the difficulties in getting out there, and you can slow down and enjoy superb Pacific Northwest diving on an international scale, as this remote plateau welcomes hardy divers the world over. ■

Seattle-based F. Stuart Westmorland is a freelance photographer and writer who specializes in natural history and travel subjects.

First Stop: Cabo San Lucas

Are We Having Fun Yet?

You Bet!

Now, I don't want anybody to get the wrong idea. I am, and always will be, a California diver. California divers, after all, know what *real* diving is; the shafts of yellow-green light piercing a darkened kelp canopy, the shadows of fat bass looming just beyond reach, hundred-pound sea lions playing "tag, you're it!" with a sweep of their fins, and, oh yeah, the bone-numbing chill that creeps up your legs and arms and down your back, even though you're wearing more rubber than a December delivery for Frederick's of Hollywood.

Yeah, it's cold in these waters, especially around this time of year. But hey, it's supposed to be cold. That's what separates wimpy resort divers from macho divers like us, right? Hell, we *like* it cold! And who needs 100-foot visibility anyway?

Okay, okay. Time for truth. Fact is, I've grown a little tired of the cold, and I've been ducking dive trips lately. ("Going to Begg Rock, eh? January 15? Aw gee, sounds great, but I gotta be outta town.") The divers I run with are immune to the cold like a thick-skulled simpleton is immune to hammer blows to the head, so they've been spending a lot of time in the water lately, which means I've been having

But huddling in a darkened living room beneath a smelly old army blanket, eyes bleeding from the radiation of non-stop MTV, is no respectable way to duck cold water dive trips. So I figured it was time to get out of town for awhile. I mean really get out of town, as in opening my front door and "Going Outside!" Yeah, I was ready for a change in latitude, a change in attitude, as Jimmy Buffett says. I was ready for some warm water, colorful coral reefs and pretty tropical fishies.

So seeing as there are suckers born every minute, I talked PACIFIC DIVER into assigning me to Baja California as a roving reporter, and then I filled my boat full of canned food, gasoline and scuba tanks, and off I went, headed for the balmy skies and warm waters of the "Caribbean of the Pacific" — the Sea of Cortez.

It took me a couple of weeks of ducking in and out of anchorages down Baja's rugged Pacific coastline before I finally rounded Land's End at the tip of Baja California and pulled into the tropical seaside village of Cabo San Lucas. It was a long trip, and I was looking forward to a couple of cold *cervezas* and my first warm water dive in the Sea of Cortez.

I had been reading up on my Baja books during the trip down so I knew exactly where my first dive would be. Out at Pelican Rock, a few hundred yards outside of Cabo's harbor. At Pelican Rock Pacific pelagics mingle with Sea of Cortez tropicals like at Sea World after visiting hours. At Pelican Rock fat sheephead and gaudy angelfish eye each other warily. "Flashy showoff," the sheephead says to the angelfish. "Ugly mutha," the angelfish retorts. (The days are long and the imagination grows restless when you're alone on an 800-mile boat trip.)

Pelican Rock is also close to Cabo's famous underwater sandfalls. I guess the bay is formed by a collection of deep submarine canyons, rimmed by a sand-covered bench. Everywhere you look, sand pours off the bench like a waterfall into a fast stream, sliding down the steepening slope, then tumbling over the edge like a leap from a tall building into the abyss.

Have you ever noticed how the mental snapshots you take of how your trip is



"Baja" John.

going to turn out are often unrecognizable by the time reality sets in? Case in point: after dropping anchor in Cabo harbor and checking in with the authorities, my mental snapshots showed me zooming off in my dive gear-laden inflatable toward Pelican Rock.

As it turned out, my first dive in the Sea of Cortez was not out with the pelagics of Pelican Rock, but instead it was standing on a silt bottom in eight feet of murky harbor water, cradling in my arms a five-foot stainless-steel prop shaft and an 18-inch bronze propeller.

I realize now that fixing broken boats is as much a part of the diving scene in Cabo

A welcome sight. After 800 miles, Land's End and Cabo San Lucas.



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San Lucas as tropical fish. Divers are popular in this part of the world, and as soon as you lift a scuba tank out of a storage bin you can expect to be barraged with "hellos!" from neighboring boats, boats that just happen to need a little repair below their waterlines.

The nondiving boat owner who caught me before I could escape to the sandfalls was named Gary. Gary somehow managed to combine courage and stupidity in heroic proportions to get himself into his mess. Picture him if you will, cruising down the Pacific coast of Baja, it's nighttime, it's dark, he's alone on the open ocean, and he's free-diving beneath his boat, lashing out blindly with a serrated knife, trying to cut loose the sail he'd wrapped around his propeller. Climbing back on board, with the help of his sheet winches and a couple of rugged tugs, he manages to tear the sail, and the propeller, and the propeller shaft, clean out of the bottom of the boat, leaving a gaping 1¼-inch hole into which the Pacific Ocean invites itself. Welcome to solo sailboat cruising.

Luckily, King Neptune had smiled on Gary; he managed to plug the hole, staggered into Cabo San Lucas, his brother flew down with some new parts, and here I was, the Good Samaritan, standing in the mud under Gary's boat muscling this propeller shaft and trying to enjoy my first dive in paradise.

Knock-knock from inside the boat. That means push the shaft forward — Gary's on board trying to align the coupling. *Knock-knock-knock*. Too far, pull it back. Now *knock-knock* again. Get it right, Gary. I'm running out of air, and I'm growing tired of this Good Samaritan stuff.

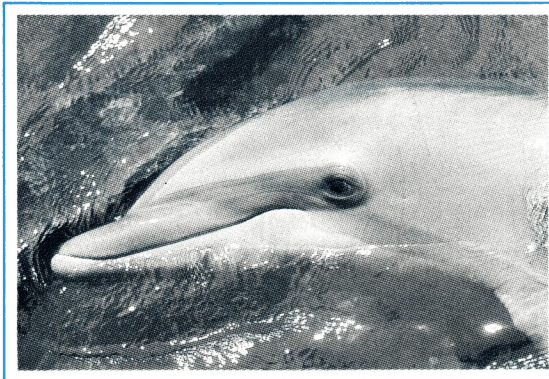
Well, since I'm down here with no place to go, I ought to tell you that on my travels in the Sea of Cortez I'm going to be hitting all the dive spots, famous and undiscovered, and report back to you on what I find. Are the big resorts as good as they look in the ads? I'll check them out. Do the charter boats have good burgers — or burritos? Is the *cerveza* cold? And above all, is the water WARM? Stay tuned.

It's a tough job. No, actually, holding this propeller shaft is a tough job. Exploring the Sea of Cortez ought to be fun. That is, if I can ever get out from beneath this boat.

See you next issue. In the meantime, if anyone asks about me, tell them I'm out at, uh, Begg Rock. ■

"Baja John" Francis is PACIFIC DIVER's S.O.B. contributing editor, where he covers the sport diving scene in the Sea of Cortez.

Some divers don't need a PADI Dive Center...



...but only a few.

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DIVE BOAT SCHEDULES

MONTEREY

Cypress Sea, 408/244-4433

Monterey Wharf II
50/20 Divers/Capt. M. Vandenberg
All trips to Monterey/Carmel areas.
Available daily.

March:

- 3 Steele's Dive Shop, 415/682-5082
- 4 Any Water Sports, 408/244-4433
- 10 Divemasters, 415/969-7782
- 11 Any Water Sports, 408/244-4433
- 17 Wallins Dive Shop, 415/369-2131
- 18 Anchor Shack, 415/825-4960
- 24 Ocean Odyssey, 916/758-3483
- 25 Dublin Scuba, 415/825-4960
- 31 Olympic Scuba, 415/933-6045

April:

- 1 Any Water Sports, 408/244-4433
- 7 Steele's Dive Shop, 415/682-5082
- 8 Flipper Dippers, 408/280-1010
- 14 Divemasters, 415/969-7782
- 15 Anchor Shack, 415/825-4960
- 21 Wallins Dive Shop, 415/369-2131
- 22 Dublin Scuba, 415/833-2518
- 28 Olympic Scuba, 415/933-6045
- 29 Any Water Sports, 408/244-4433

May:

- 5 Steele's Dive Shop, 415/682-5082
- 6 Any Water Sports, 408/244-4433
- 12 Divemasters, 415/969-7782
- 13 Any Water Sports, 408/244-4433
- 19 Wallins Dive Shop, 415/369-2131
- 20 Anchor Shack, 415/825-4960
- 26 Ocean Odyssey, 916/758-3483
- 27 Dublin Scuba, 415/833-2518

Silver Prince, 408/394-4235

Monterey Wharf II
40/15 Divers/Capt. Gary Goulart

March:

- 3 A.M. Pinnacles Dive Center, 415/897-9962
- 4 A.M. Get Down Divers, 408/438-3795
- 10 A.M. Fremont Dive Center, 415/657-1004
- 11 A.M. Valley Skin & Scuba, 209/333-2343
- P.M. Olympic Dive & Travel, 415/933-6045
- 17 A.M. Undersea Adventures, 415/838-2348
- 18 All Day: Scuba Town, 415/939-3483
- 24 A.M. Fremont Dive Center, 415/657-1004
- 25 A.M. Valley Aquatics, 209/527-2822
- 31 A.M. Bamboo Reef, 415/362-6694

April:

- 1 A.M. Stan's Dive Shop, 408/998-0767
- P.M. Olympic Dive & Travel, 415/933-6045
- 7 A.M. Pinnacles Dive Center, 415/897-9962
- 8 All Day: Scuba Town, 415/939-3483
- 14 A.M. Undersea Adventures, 415/838-2348
- 21 A.M. Valley Aquatics, 209/527-2822
- 22 A.M. Stan's Dive Shop, 408/998-0767
- P.M. Olympic Dive & Travel, 415/933-6045
- 28 All Day: Bamboo Reef, 415/362-6694
- 29 A.M. Valley Skin & Scuba, 209/333-2343
- P.M. Get Down Divers, 408/438-3795



RICK BAKER

May:

- 5 A.M. Pinnacles Dive Center, 415/897-9962
- 6 All Day: Landfall Productions, 415/651-6499
- 12 A.M. Undersea Adventures, 415/838-2348
- 13 A.M. Valley Skin & Scuba, 209/333-2343
- 19 A.M. Valley Aquatics, 209/527-2822
- 20 All Day: Scuba Town, 415/939-3483
- 26 A.M. Bamboo Reef, 415/362-6694
- 27 A.M. Stan's Dive Shop, 408/998-0767

Xeno, 408/426-7376

38/6 Divers/Capt. Jon Capella
Available seven days a week.

SANTA BARBARA

Conception, 805/962-1127, 805/963-3564

Sea Landing Breakwater
81/35 Divers/Capt. Jerry Boylan

March:

- 2-3 UC Santa Cruz, 408/462-5409
- 9-10 Sea Sabres, 213/947-0625
- 11-12 Blue Fins Dive Club (1/2), 213/391-0948
- Desert Divers Supply (1/2), 702/438-1000
- 15 Open Boat, 805/962-1127
- 16-17 Ocean Funatics, 408/427-1620
- 30-31 Aqua Adventures, 818/848-2163

April:

- 13-15 I See, 408/629-8496
- 21-22 Tom Campbell's Dive & Travel, 805/965-4951
- 26-28 Cal School of Diving, 415/644-2373

May:

- 4-5 Aqua Adventures, 818/848-2163
- 11-12 Tom Campbell's Dive & Travel, 805/965-4951
- 18-19 Any Water Sports, 408/244-4433
- 26-28 Ocean Odyssey, 408/475-3483

Truth, 805/962-1127, 805/963-3564

Sea Landing Breakwater
65/30 Divers/Capt. Bill Yznaga
Call numbers above for open boats.

March:

- 3 Open Boat
- 3-5 Any Water Sports, 408/244-4433
- 7 Open Boat
- 8 Open Boat 9-10 Sea Sons (1/2), 714/735-3284
- B.E.N.T. (1/2), 213/375-7121
- 14 Open Boat 15-17 Ocean Odyssey, 408/475-3483
- 18-19 Aqua Nuts, 805/541-3761
- 21 Open Boat
- 24 Open Boat
- 28 Open Boat
- 29 Open Boat
- 31-4/2 Private Charter

April:

- 4 Open Boat
- 5 Open Boat
- 7-8 Blue Fins Dive Club,

- 213/391-0948
- 11 Open Boat
- 12 Open Boat
- 18 Open Boat
- 19 Open Boat
- 20-21 Ocean Odyssey, 408/475-3483
- 25 Open Boat
- 26 Open Boat

May:

- 2 Open Boat
- 3 Open Boat
- 4-5 Flipper Dippers (1/2), 408/358-3995
- Neptune Divers (1/2), 801/466-9630
- 9 Open Boat 10-12 Ocean Funatics, 408/427-1620
- 16 Open Boat
- 17 Open Boat
- 23 Open Boat
- 24 Open Boat
- 26-28 Pinnacles Dive Shop, 800/223-4837
- 30 Open Boat
- 31 Open Boat

Vision, 805/962-1127, 805/963-3564

Sea Landing Breakwater
88/35 Divers/Capt. Robbie Church

March:

- 8-10 Discovery Charters, 818/790-8276
- 16-17 Tom Campbell's Dive & Travel, 805/965-4951
- 22-24 Dive 'n Surf, 213/372-8423
- April:
- 7-9 Bamboo Reef, 415/362-6694
- 14-16 Anchor Shack, 415/825-4960
- 20-22 Dave Fought, 408/358-3221

May:

- 4-6 Marin Skin Diving, 415/479-4332
- 11-12 Discovery Charters, 818/790-8276
- 23-24 UC Berkeley, 415/642-1298
- 26-28 Blue Fins Dive Club, 213/391-0948
- 29-30 UC Santa Cruz, 408/462-5409

VENTURA

Chieftain, 805/652-0321

Ventura Harbor
50/20 Divers/Capt. David Rentfrow
Call for available dates.

Liberty, 805/483-6612, 805/642-1233

Ventura Harbor Village
85/40 Divers/Capt. Phil Bordini
Note: From Jan. 1 to Apr. 1, 1990, Liberty will be whale watching out of San Pedro. Boat will return to Ventura Apr. 1 to resume dive charters. For charter info., write P.O. Box H, South Gate, CA 90282.

Peace, 805/658-8286

Ventura Harbor Village
65/32 Divers/Capt. Bill Magee, Mike Roach
Call number above for open boats.

March:

- 1-3 Ken Snodgrass, 415/449-4731
- 4 W.C.D.S., 818/708-8136
- 7 Santa Rosa: Open Boat
- 10 Five Star Instructional Group,

- 213/456-3483
- 11 Santa Rosa: Channel Islands Scuba, 805/644-3483
- 14 San Nicolas: Open Boat
- 16-18 Stu's Scuba Tours, 415/686-6111
- 20-21 San Nicolas: Open Boat
- 24-25 Five Star Instructional Group, 213/456-3483
- 28 Santa Rosa: Open Boat
- 31 W.C.D.S., 818/708-8136

April:

- 1 Ventura Dive & Sport, 805/656-0167
- 4 Santa Cruz: Open Boat
- 5 Santa Cruz: Open Boat
- 7 Five Star Instructional Group, 213/456-3483
- 8 Scuba Escape, 213/391-3119
- 11 Santa Rosa: Open Boat
- 12 Santa Cruz: Open Boat
- 14-15 Island Packers, 805/642-1393
- 18 San Miguel: Open Boat
- 19 Santa Cruz: Open Boat
- 21 West Coast Divers Supply, 881/708-8136
- 22 Tae Lee, 805/255-0106
- 25 Gull Island: Open Boat
- 26 Santa Cruz: Open Boat
- 28-29 Five Star Instructional Group, 213/456-3483

May:

- 2 Santa Rosa: Open Boat
- 5 Channel Islands Scuba, 805/644-3483
- 6 West Coast Divers Supply, 818/708-8136
- 9 Gull Island: Open Boat
- 10-12 A&B Undersea, 415/485-1700
- 12 Channel Islands Scuba, 805/644-3483
- 13 Santa Cruz: Open Boat
- 16 Santa Rosa: Open Boat
- 17 Santa Cruz: Open Boat
- 18-19 T.R.W., 213/372-7764
- 20-21 Five Star Instructional Group, 213/456-3483
- 23 Gull Island: Open Boat
- 24 Santa Cruz: Open Boat
- 26-28 World Sea Adventures, 916/487-7433
- 30 San Miguel: Open Boat
- 31 Santa Cruz: Open Boat

Scuba Luv'er, 800/227-3018, 805/496-1014

Ventura Harbor Village
65/12-34 Divers/Capt. Phil Bordini
Call numbers above for open boats or Scuba Luv.

March:

- 2 Shark Dive: Scuba Luv
- 3 Santa Rosa: Scuba Luv
- Aquatics, 818/346-4799
- 4 Santa Cruz/Anacapa: Scuba Luv
- 7 Cat Rock Pinnacles: Open Boat
- 9 Lobster Dive: Scuba Luv
- Aquatics, 818/346-4799
- 10 Captain Frog, 805/833-3281
- 11 Santa Cruz/Anacapa: Scuba Luv
- 14 Anacapa Pinnacles: Open Boat
- 15 Shark Dive: Scuba Luv
- 16 Lobster Dive: Scuba Luv
- 17-18 San Miguel: Aqua Sports, 209/224-0744
- 21 Last Chance Lobster Dive:

- Open Boat
- 23 Shark Dive: Scuba Luv
- 24 Santa Rosa: Scuba Luv
- 25 Santa Cruz/Blue Banks: Scuba Luv
- Aquatics, 818/346-4794
- 28 Marine Preserve: Open Boat
- 30 Shark Dive: Scuba Luv
- 31 Fornies Cove: Scuba Luv

Spectre, 805/483-6612, 805/642-1233

Ventura Harbor Village
85/36 Divers/Capt. Ted Cumming
Call numbers above for open boats.

March:

- 2-4 Santa Rosa/San Miguel: Ocean Odyssey, 916/758-3483
- 10 Santa Cruz: Blue Cheer, 213/828-1217
- 11 Santa Cruz: Santa Barbara Aquatics, 805/964-8689
- 16-17 Outer Islands: Spectre Explorers, 805/483-6612
- 18 Anacapa/Santa Cruz: Scuba Duba (1/2), 818/881-4545
- West Coast Divers Supply (1/2), 818/708-8137
- 24 Anacapa/Santa Cruz: Port Hueneme Aquatics, 805/984-3483
- 25 Anacapa/Santa Cruz: Far West Marine, 805/495-3600
- 31 Santa Cruz: Open Boat

April:

- 1 Santa Cruz: Scuba Duba Dive (1/2), 818/881-4545
- Blue Cheer (1/2), 213/828-1217
- 7 Santa Cruz: Desert Scuba (1/2), 805/948-8883
- Innerspace Divers (1/2), 805/399-1425
- 8 San Miguel: Channel Islands Scuba, 805/644-3483
- 14 Anacapa/Santa Cruz: Open Boat
- 15 Anacapa/Santa Cruz: Open Boat
- 20 Capt's Choice: Explorer's Club, 805/483-6612
- 21 Santa Cruz: Santa Barbara Aquatics, 805/964-8689
- 22 Santa Cruz: Blue Cheer, 213/828-1217
- 28 Santa Cruz: Open Boat
- 29 Santa Cruz: Far West Marine, 805/495-3600

May:

- 5 Santa Cruz: Blue Cheer, 213/828-1217
- 6 Santa Cruz: Scuba Duba Dive, 818/881-4545
- 12 Santa Cruz: Blue Cheer, 213/828-1217
- 13 Santa Cruz: Santa Barbara Aquatics (1/2), 805/964-8689
- MDR Divers, 213/827-1131
- 18 Capt's Choice: Explorer's Club, 805/483-6612
- 19 Anacapa/Santa Cruz: L.A. UPS, 213/545-0513
- 20 Anacapa/Santa Cruz: Blue Cheer, 213/828-1217
- 26 Santa Ana College, 714/693-8694
- 27 Anacapa/Santa Cruz: Far West Marine, 805/495-3600
- 28 Santa Barbara: Channel Islands Scuba, 805/644-3483

CHANNEL ISLANDS

Sandy Bay, 213/828-2418

32/16 Divers/Capt. Bob Perry
Call for available dates.

PORT HUENEME

Sea Ventures, 805/985-1100

Sportfishing Landing
55/28 Divers/Capt. Mickey Defazio
Call for available dates.

SAN PEDRO

Atlantis, 213/831-6666

22nd St. Landing
65/35 Divers/Capt. Brian Dull

DIVE BOAT SCHEDULES

Call number above for open boats.

March:

- 3 Sport Chalet, 818/790-9800
- 4 Ski & Sport, 714/633-1880
- 10 Sculpins Dive Club, 714/995-6228
- 11 Sport Chalet, 818/790-9800
- 17 Sport Chalet, 818/790-9800
- 18 Openwater Habitat, 714/744-8355
- 21 Divers Corner, 213/927-1417
- 24 Sport Chalet, 818/790-9800
- 25 Ski & Sport, 714/633-1880
- 31 Sport Chalet, 818/790-9800

April:

- 1 Available for Charter, 213/831-6666
- 7 Sport Chalet, 818/790-9800
- 8 Ski & Sport, 714/633-1880
- 14 Sport Chalet, 818/790-9800
- 15 Available for Charter, 213/831-6666
- 21 Sport Chalet, 818/790-9800
- 22 Ski & Sport, 714/633-1880
- 28 Sport Chalet, 818/790-9800
- 29 Marine del Rey Divers, 213/827-1131

May:

- 5 Sport Chalet, 818/790-9800
- 6 Pacific Sculpins, 714/995-6228
- 12 Sport Chalet, 818/790-9800
- 13 B.E.N.T., 213/375-7121
- 19 Sport Chalet, 818/790-9800
- 20 Available for Charter, 213/831-6666
- 26 Sport Chalet, 818/790-9800
- 27 Marina del Rey Divers, 213/827-1131
- 28 Pasadena Scuba, 818/796-2000

Bold Contender, 818/366-2611

22nd St. Landing
65/34 Divers/Capt. Jerry Shapiro
Call for available dates.

Cee Ray, 213/519-0880, 213/867-9738

22nd St. Landing
65/32 Divers/Capt. Arnold Lancaster

March:

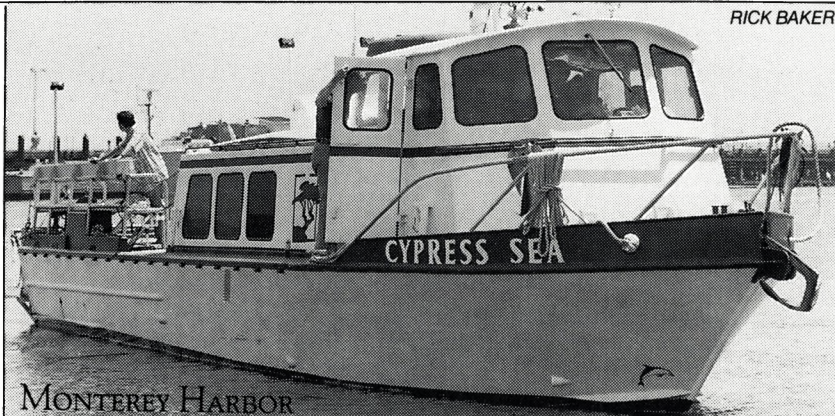
- 3 Available for Charter, 213/519-0880
- 4 Available for Charter, 213/519-0880
- 10 Santa Barbara: Sport Chalet, 818/790-9800
- 11 Available for Charter, 213/519-0880
- 17 Santa Ana College, 714/693-8694
- 18 San Nicholas: Sport Chalet, 818/790-9800
- 24 Santa Barbara: Santa Monica Bluefins, 213/391-0948
- 25 Santa Barbara: Reef Seekers, 213/652-4990
- 31 Catalina: Sport Chalet, 818/790-9800

April:

- 1 Available for Charter, 213/519-0880
- 7 Catalina: Sport Chalet, 818/790-9800
- 8 Catalina: Sport Chalet, 818/790-9800
- 14 Santa Ana College, 714/693-8694
- 15 Marina del Rey Divers, 213/827-1131
- 21 Santa Barbara: Sea Sabres, 213/947-0625
- 22 San Clemente: Sport Chalet, 818/790-9800
- 28 Catalina: Sport Chalet, 818/790-9800
- 29 Available for Charter, 213/519-0880

May:

- 6 San Clemente: Reef Seekers, 213/652-4990
- 12 San Clemente: Sport Chalet, 818/790-9800
- 13 San Clemente: Santa Monica Bluefins, 213/391-0948
- 19 San Clemente: Sea Sabres, 213/947-0625
- 20 Catalina: Sport Chalet, 818/790-9800



- 26 Catalina: Sport Chalet, 818/790-9800
- 27 Available for Charter, 213/519-0880
- 28 San Clemente: Sport Chalet, 818/790-9800

Charisma, 213/832-8304, 213/326-7460

22nd St. Landing
78/35 Divers/Capt. John Hess
Call for available dates.

Encore, 213/832-8304, 213/326-7460

22nd St. Landing
78/35 Divers/Capt. Randy Beaver
Call for available dates.

Golden Doubloon, 714/963-4378

22nd St. Landing
65/34 Divers/Capt. Greg Elliott (Charters exclusively to Catalina)
Call number above for open boats or charters.

March:

- 3 Black Barts, 714/496-5891
- 4 Marina del Rey Divers, 213/827-1131
- 10 Open for Charter
- 11 Open for Charter
- 17 Marina del Rey Divers, 213/827-1131
- 18 Aquatic Center, 714/650-5440
- 24 Mr. Scuba, 714/838-6483
- 25 Marina del Rey Divers, 213/827-1131
- 31 Black Barts, 714/496-5891

April:

- 1 Open for Charter
- 7 Open for Charter
- 14 Open for Charter
- 21 Mr. Scuba, 714/838-6483
- 22 Aquatic Center, 714/650-5440
- 28 Black Barts, 714/496-5891
- 29 Marina del Rey Divers, 213/827-1131

May:

- 5 Open for Charter
- 6 Marina del Rey Divers, 213/827-1131
- 12 Mr. Scuba, 714/838-6483
- 13 Marina del Rey Divers, 213/827-1131
- 19 Marina del Rey Divers, 213/827-1131
- 20 Aquatic Center, 714/650-5440
- 26 Black Barts, 714/496-5891
- 27 Mr. Scuba, 714/838-6483
- 28 Mr. Scuba, 714/838-6483

Magician, 213/548-6129

22nd St. Landing
65/35 Divers/Capt. Ira Burdine
Call number above for open boats or charters.

March:

- 3 Catalina: Scuba Haus, 213/828-2916
- 4 Catalina: Scuba Toys, 714/527-0430
- 10 Catalina: Sport Chalet, 818/790-9800
- 11 Catalina: Open Boat
- 17 Catalina: Guccione's Scuba Habitat, 714/594-7927
- 18 Catalina: Open Boat

- 24 Catalina: Divers West, 818/796-4287
- 25 Catalina: Scuba Haus, 213/828-2916
- 31 Catalina: American Diving, 213/326-6663

April:

- 1 Catalina: Scuba Toys, 714/527-0430
- 7 Catalina: Open Boat
- 8 Catalina: Open Boat
- 14 Catalina: Reef Seekers, 213/652-4990
- 21 Catalina: Guccione's Scuba Habitat, 714/594-7927
- 22 Catalina: Divers West, 818/796-4287
- 28 Catalina: American Diving, 213/326-6663
- 29 Catalina: Scuba Haus, 213/828-6129

May:

- 5 Catalina: Open Boat
- 6 Catalina: Scuba Toys, 714/527-0430
- 12 Catalina: American Diving, 213/326-6663
- 13 Catalina: Sport Chalet, 818/790-9800
- 19 Catalina: Divers West, 818/796-4287
- 20 Catalina: Scuba Haus, 213/828-2916
- 26-27 Outer Islands: Reef Seekers, 213/652-4990

Maverick, 213/547-3824

22nd St. Landing
58/25-30 Divers/Capt. Floyd Bryan
Call number above for open boats or charters.

March:

- 3 Catalina: New England Divers, 213/421-8939
- 11 Catalina: New England Divers, 213/421-8939

April:

- 1 Catalina: Reef Seekers, 213/653-4990
- 29 Catalina: Reef Seekers, 213/653-4990

May:

- 12 Catalina: New England Divers, 213/421-8939
- 20 Catalina: Reef Seekers, 213/653-4990
- 26 Catalina: West Coast Divers, 818/708-8136

Scuba Queen, 213/691-0423

Cabrillo Marina 65/38 Divers/
Capt. Ed Lord
Call for available dates.

Westerly, 213/833-6048

22nd St. Landing
55/30 Divers/Capt. Jim Ingram
Call above number for open boats.

March:

- 3 San Nicolas: Dive 'n Surf, 213/372-8423
- 4 Mr. Scuba, 714/838-6483
- 10 San Nicolas: Douglass Dive Club, 714/960-2764
- 11 Catalina/Backside: Dive 'n Surf, 213/372-8423
- 17 San Nicolas: Dive 'n Surf, 213/372-8423
- 18 San Nicolas: Golden Reef

- Divers, 818/443-2103
- 21 San Nicolas: Dive 'n Surf, 213/372-8423
- 24 San Nicolas: John Roodenburg, 213/536-0404
- 25 Farnsworth Bank: Desert Divers, 805/947-0863

April:

- 1 Catalina/Backside: Dive 'n Surf, 213/372-8423
- 7 Santa Barbara: Dive 'n Surf, 213/372-8423
- 8 Mr. Scuba, 714/838-6483
- 13 Catalina: Dive 'n Surf, 213/372-8423
- 14 Begg Rock: Douglass Dive Club, 714/960-2764
- 15 Catalina/Backside: B.E.N.T., 213/306-6090
- 21 San Clemente: Dive 'n Surf, 213/372-8423
- 22 Santa Barbara: Golden Reef Divers, 818/443-2103
- 28 Catalina: Hughes Dive Club, 213/324-8583
- 29 Catalina/Backside: Dive 'n Surf, 213/372-8423

May:

- 5 San Clemente: Douglas Dive Club, 714/960-2764
- 6 Clemente: Dive 'n Surf, 213/372-8423
- 11 Catalina: Dive 'n Surf, 213/372-8423
- 12 Santa Barbara: Dive 'n Surf, 213/372-8423
- 13 San Clemente: John Roodenburg, 213/536-0404
- 19 San Clemente: Dive 'n Surf, 213/372-8423
- 20 Mr. Scuba, 714/838-6483
- 25 Catalina: Dive 'n Surf, 213/372-8423
- 26 Farnsworth: Hughes Dive Club, 213/324-8583
- 28 Catalina/Backside: Dive 'n Surf, 213/372-8423
- 31 Catalina: Shelley Johnson

Wild Wave, 213/534-0034

22nd St. Landing
65/26 Divers/Capt. Mickey Pittman
Call for available dates.

LONG BEACH

Mr. C, 213/831-9449

Long Beach Sportfishing
55/40 Divers/Capt. Tom Rossin
Call for available dates.

Sun Diver, 213/434-1198

Los Alamitos Bay
54/24+ Divers/Capt. Rich Wallace
Call for available dates.

AVALON HARBOR

King Neptune, 213/510-2616, 800/262-DIVE

65/30 Divers/Capt. Bob Kennedy
Call numbers above for open boats.

March:

- 3 Open Boat
- 4 Open Boat

- 10 Open Boat
- 11 Open Boat
- 17 Open Boat
- 18 Open Boat
- 19 Farnsworth Banks: Open Boat
- 24 Open Boat
- 25 Open Boat
- 30 Shark Dive: Sport Chalet, 213/510-1225
- 31 Shark Dive: Sport Chalet, 213/510-1225

SAN DIEGO

Bottom Scratcher,

619/224-4997
Pt. Loma Sportfishing
65/21-36 Divers/Capt. Dan Camp

March:

- 3-4 San Clemente: Scuba Science, 602/995-5926
- 6-8 San Clemente/Cortez, Ron Sparling, 415/332-1227
- 10 Coronados: Scuba Science, 602/995-5926
- 11 San Clemente: Adventures in Diving, 714/499-4517
- 13-15 San Clemente/Cortez: Aquatic Sports, 503/245-4991
- 17-18 San Clemente: Scuba Science, 602/995-5926
- 19-21 San Clemente/Cortez: Thunder Island, 801/776-6316
- 24-25 San Clemente: Scuba Science, 602/995-5926
- 31-4/1 San Clemente: Scuba Science, 602/995-5926

April:

- 7 Coronados: Scuba Science, 602/995-5926
- 8 Coronados: Adventures in Diving, 619/499-4517
- 13-15 San Clemente: Scuba Science, 602/995-5926
- 21-22 San Clemente: Scuba Science, 602/995-5926
- 28-29 San Clemente: Scuba Science, 602/995-5926

May:

- 5-6 San Clemente: Scuba Science, 602/995-5926
- 12-13 San Clemente: Scuba Science, 602/995-5926
- 19 Coronados: Waterworld, 602/763-5531
- 26-28 San Clemente: Scuba Science, 602/995-5926

Horizon, 619/277-7823

H & M Landing
78/35-42 Divers/Capt. Lou & Greg Grivetto

March:

- 3-4 San Clemente: Sundiver, 602/996-7665
- 10 Coronados: Sport Chalet, 619/224-6777
- 11 Coronados: Aqua Tech, 619/237-1800
- 17-18 San Clemente/Cortez: Sport Chalet, 619/224-6777
- 24-25 San Clemente: El Mar Dive Center, 619/833-2971
- 31 Pt. Loma & Wrecks, L.A. UPS, 213/385-7381

April:

- 1 Coronados: Aqua Tech, 619/237-1800
- 7 Coronados: Sport Chalet, 619/224-6777
- 8 Coronados: Aqua Tech, 619/237-1800
- 21-22 San Clemente: Closed Charter
- 28 Coronados: Sport Chalet, 619/224-6777
- 29-30 San Clemente: Sundiver, 602/996-7665

May:

- 5 Coronados: Aqua Marines, 714/492-8615
- 6 Coronados: Sport Chalet, 619/224-6777
- 12-13 San Clemente: Aqua Tech, 619/237-1800
- 19 San Clemente: Sport Chalet, 619/224-6777

Continued

20 Coronados: Sport Chalet,
619/224-6777
26-27 San Clemente: Sundiver,
602/996-7665
28 Coronados: Sport Chalet,
619/224-6777

Sand Dollar, 619/224-4997

Pt. Loma Sportfishing
65/26-36 Divers/Capt. Bill Johnston

March:

3 Coronados: San Diego Divers,
619/224-3439
4-6 San Clemente/Cortez
10-11 San Clemente/Cortez: Diving
Locker, 619/272-1120
15-17 San Clemente/Cortez: Tri-West,
503/761-5435
18 Coronados: Diving Locker,
619/272-1120
19-21 San Clemente/Cortez: Univ. of
Utah, 801/355-6134
24 Coronados: Diving Locker,
619/272-1120
25 Coronados: Ocean Enterprises,
619/565-6054

April:

1 Coronados: Colo-Riv-Divers,
702/293-6648
7 Coronados: Diving Locker,
619/271-5231
14 Coronados: Waterworld,
602/763-5531
15 Coronados: Ocean Enterprises,
619/565-6054
21 San Clemente: Diving Locker,
619/755-6822
22 Coronados: La Jolla Divers,
619/459-2691
28-29 San Clemente: Scuba Science,
602/995-5926

May:

12 San Clemente: Adventures in
Diving, 714/499-4517
13 Coronados: San Diego Divers,
619/224-3439
19 Coronados: Scuba Science,
602/995-5926
20-21 San Clemente: Cal-Riv-Val,
619/326-3232
27 Coronados: Diving Locker,

619/746-8980

28 Coronados: Ocean Enterprises,
619/565-6054

The America, 619/584-0742

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Sea Wolf, 206/293-4248

Cap Sante Boat Haven
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March:

3-4 San Juan Islands: Open Boat
10-11 San Juan Islands: Open Boat
17-18 San Juan Islands: Open Boat
24-25 San Juan Islands: Open Boat
31-4/1 San Juan Islands: Open Boat

April:

7-8 San Juan Islands: Open Boat
14-15 San Juan Islands: Open Boat
28-29 San Juan Islands: Open Boat

May:

4-6 San Juan Islands: Open Boat
12-13 San Juan Islands: Open Boat
19-20 San Juan Islands: Open Boat

Star Fire, 206/364-9858

Cap Sante Marina
54/28 Divers/Capt. Gordon Bradley Call
number above for chartering
information.

March:

3 San Juan Islands: Open Boat
4 San Juan Islands: Open Boat
10 San Juan Islands: Open Boat
11 San Juan Islands: Open Boat
17 San Juan Islands: Open Boat
18 San Juan Islands: Open Boat
24 San Juan Islands: Open Boat
25 San Juan Islands: Open Boat
31 San Juan Islands: Open Boat

April:

1 San Juan Islands: Open Boat

7 San Juan Islands: Open Boat
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May:

5 San Juan Islands: Open Boat
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STEVE ESSIG

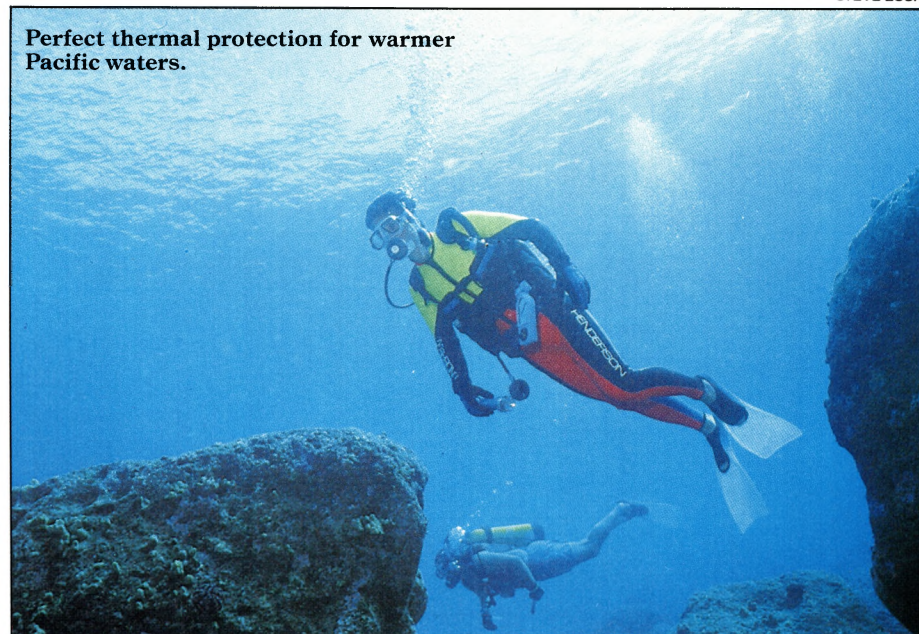
Henderson's M830 Thin Suit

From the Washington/Canada border to the California/Mexico border, Pacific divers can count on having to wear at least a quarter-inch wetsuit and often even a drysuit, if not year-round, at least during the darkest days of winter.

But that's just Pacific Coast diving. There are plenty of other dive locales in the Pacific Rim where the water is warmer and the surface conditions more conducive to lighter divewear. There's Hawaii, there's the Sea of Cortez, there's even the South Pacific. Because of the warmer temperatures both above and below the surface at these dive destinations, you simply don't need as much thermal protection as a big quarter-inch suit provides, but you do need some protection, and that's where Henderson's M830 wetsuit enters the picture.

The M830 is made of 2mm neoprene, which is slightly thinner and more pliable than an 1/8-inch wetsuit. It's thick enough to ward off a chill during multiple dives in water temperatures ranging from the high 70s to the low 80s, but it's thin enough to

allow total comfort and complete freedom of movement.



allow total comfort and complete freedom of movement.

The M830 comes in a variety of neon color combinations, as available. Men's sizes range from S-XXL, and women's sizes

range from S-XL. The M830 carries a suggested retail price of \$212.

For more information, contact Henderson Divewear, 1 Whitall Ave., Millville, NJ 08332; (800) 525-7832. ★★ ★ 1/2



STEVE ESSIG

Thunderwear's T-667 Reef Glove

Sometimes when diving on tropical reefs the water's too warm to wear gloves for thermal protection, but it's still nice to be able to wear some sort of protection against reef obstructions. An excellent solution to this protect-the-pinkies problem is Thunderwear's T-667 reef glove. The glove combines the durability of a Thunderhide palm (the material is so dexterous you can pick up a dime wearing the gloves) with a lycra backing to provide durable but lightweight gloves that protect hands against snagging on reefs, but are so light it feels almost as if you're not wearing gloves at all.

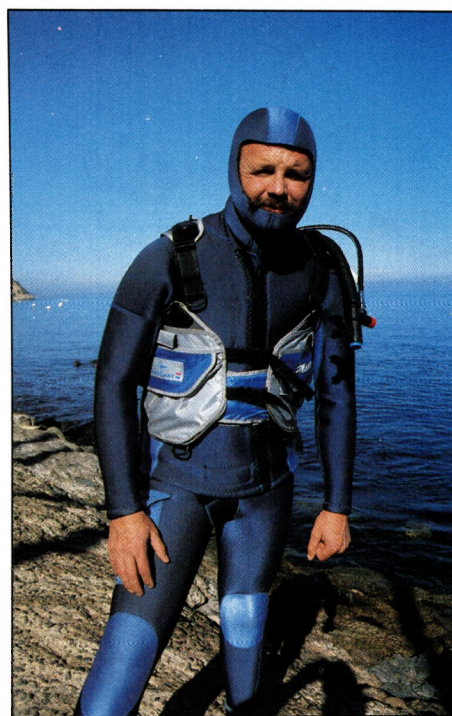


They're so light, it's like not wearing gloves at all.

The gloves are cut to barely wrist length, so they don't ride up over a wetsuit or skin suit, and a velcro strap keeps them secure.

The most popular T-667 reef glove is the "rainbow glove," (pictured), but it is also available in blue/black, red/black, lime/black and pink/black.

The T-667 comes in sizes XXS-XL, and carries a suggested retail price of \$24.95. For more information, contact Thunderwear, Inc., 903-E Calle Negocio, San Clemente, CA 92672; (800) 556-6363 Calif., (800) 422-6565 national. ★★ ★ ★



STEVE ESSIG

▲ Subscribing to the "Keep it Simple" design philosophy.

Beuchat's Master Lift BC

Low-profile single-bag buoyancy compensators are popular among today's divers, because of the lack of bulk single-bag designs afford, reducing clutter in the chest area, and drag when diving.

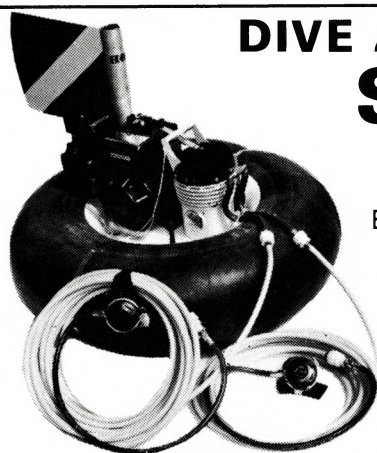
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Lift. Constructed of a polyurethane interior and a polyester exterior, the Master Lift subscribes to the "Keep it simple" philosophy. A cummerbund and two horizontal snap straps secure the unit to the body, and cinch-down shoulder straps provide adjustment for tank ride. It's simple and efficient, and includes two D-

UNLIKE TANK STRAPS THAT

REQUIRE A DEGREE IN

ENGINEERING TO OPERATE,

MASTER LIFT'S STRAP ENABLES

YOU TO EASILY READJUST FOR

VARYING TANK DIAMETERS.

rings along the bottom seam for attaching lights or other gear, and two large self-draining pockets, one of which can double as a safe second pouch.

Simplicity in design is carried back to the tank strap as well. Unlike many of today's tank straps that require a degree in engineering to operate, the Master Lift tank strap enables you to easily readjust for varying tank diameters.

About the only thing we felt the Master Lift was lacking was some kind of a strap or loop located at the top of the BC to enable you to hang the BC from a tank valve or a hanger so it can drain between dives or after a freshwater rinse.

When inflated, the single bag design provides a more than adequate amount of buoyancy considering its low profile design (from 30 pounds for a small BC to 50 pounds for an extra-large model), but like all single bag BCs, when inflating to near maximum capacity, like when treading water on the surface, be prepared for some chest squeeze, because the bladder expands inward as well as outward.

The Master Lift is available in XS-XL sizes, and retails for about \$318. For more information, contact Beuchat USA, Inc., 2900 SW 2nd Ave., Ft. Lauderdale, FL 33315; (305) 523-7242. ★★½ ■

Pacific Diver's Product Review Rating System

- ★★★★★ Outstanding product. Real state-of-the-art perfection!
- ★★★★ A great product, making diving more fun, and a lot easier.
- ★★★ A good product. Solid and functional.
- ★★ A real disappointment
- ★ Forget about it.

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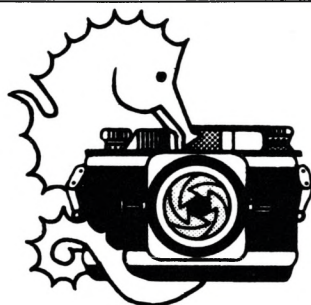
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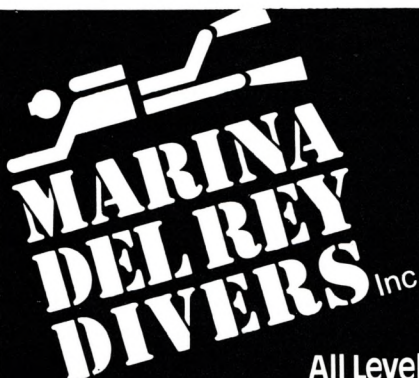


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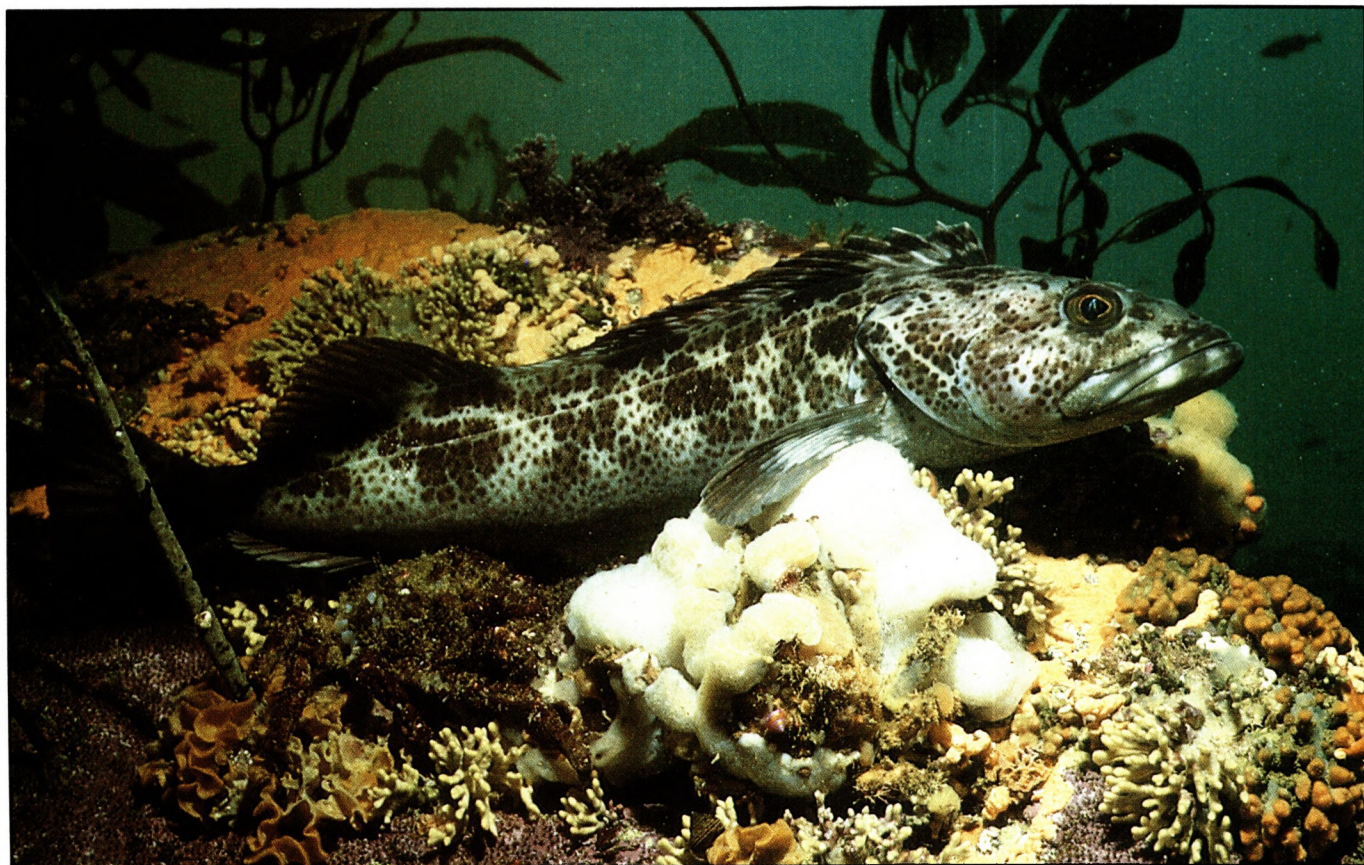
Mar 4	Golden Doubloon
Mar 17	Golden Doubloon
Mar 25	Golden Doubloon
April 1	Scuta Queen
April 8	Golden Doubloon
April 15	Cee Ray

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FOCUS ON: Lingcod



Ophiodon elongatus
Class: Osteichthyes
Order: Scorpaeniformes
Family: Hexagrammidae

Article and photo by David Wrobel

Lingcod are the monsters of the kelp forest. Many a cruising diver has been startled by the toothy smiles of these massive beasts peeking around rocky ledges. Unlike their colorful greenling relatives, which never reach even two feet in length, lingcod may exceed four feet in length and weigh up to 40 pounds.

A common sight on rocky reefs from Alaska to northern Baja California in depths reaching 2,000 feet, adult lingcod are gray or brownish-green with an attractive array of light and dark spots.

Lingcod are solitary souls and usually rest lazily on a rock outcropping waiting for careless prey to pass within reach. They are relatively fearless creatures, and will usually hold their ground until the last moment before fleeing from an approaching diver. Unlike the painted greenling — another hexagrammid, lingcod are endowed with a cavernous mouth and an appetite to match. An impressive array of sharp canine teeth are effective tools for grasping fish, squid, octopus and other large prey. Humans, in turn, prey on lingcod.

Spawning usually occurs in fall or early

winter, with the female laying a large white mass of several thousand eggs in a crevice where there's strong water motion. The smaller, darker male tenaciously guards the eggs for several weeks until they hatch. The tiny larvae are then cast into the plankton to face the innumerable obstacles to survival. In the springtime, light brown three- to five-inch juveniles are a common sight on sand and mud substrates of bays and inshore areas. They rest on the bottom, engaged in the constant battle to satisfy their ravenous appetites.

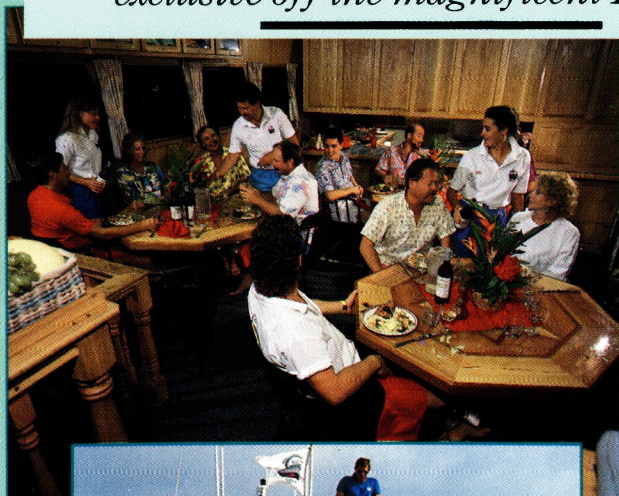
Lingcod are often infested with tiny ectoparasitic copepods that cling to the head and body. These crustaceans can sometimes be seen scurrying about the bodies of their hosts. Although usually harmless, the copepods do feed on bits of skin and may cause tissue damage with dense infestations.

Lingcod are certainly not the most common fish in the kelp forest, but being big and mean looking, they definitely draw their share of attention. ■

David Wrobel is an aquarist and biologist at the Monterey Bay Aquarium, with a special interest in life in kelp forests.



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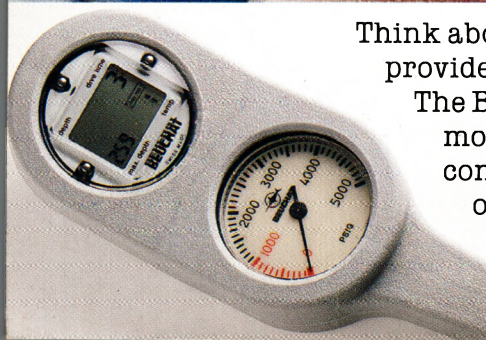
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